

*South Australian Year Book*



1969

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SOUTH AUSTRALIAN  
YEAR BOOK  
1969





*Robert Edwards*

An Aboriginal canoe tree at Chowilla on the River Murray shows the remaining scar from removal of a large sheet of bark before European settlement. The bark, over one inch thick, was used to make a canoe without lacing which is a type unique to the river systems of Southern Australia.



*South  
Australian  
Year Book*

*No. 4 : 1969*

D. L. J. AITCHISON

*Deputy Commonwealth Statistician  
and Government Statist*

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS  
SOUTH AUSTRALIAN OFFICE

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## PREFACE

The *South Australian Year Book* is published as a general reference work presenting an authoritative and comprehensive statistical and descriptive portrayal of South Australia. As such it embraces studies of the historical and geographical background and of the social, physical and financial development of the State culminating in a picture of South Australia as it is today.

This volume, the fourth issue of the Year Book, includes special articles on the Soils of South Australia, Weapons Research Establishment, Aboriginal Relics, and the England-Australia Flight in 1919. Other items of special interest are the Court of Disputed Returns, State Emblems (illustrated), Town and Regional Planning, Metropolitan Adelaide Transportation Study Report, International Congress of Soil Science, and a map showing the new boundaries of the twelve Commonwealth Electoral Divisions. To make room for the additional material and in accordance with normal practice with related publications, some chapters or portions of chapters have been condensed but in such cases appropriate cross-references are given indicating in which earlier volumes the more complete information may be found.

Other official statistics of South Australia are published in different media, each chosen as the most appropriate to meet a particular need. Mimeographed issues include bulletins or press releases which give as soon as available figures and some comment concerning a particular subject and a *Monthly Summary of Statistics* which supplies the latest information on a selected range of subjects. Printed publications embrace a *Quarterly Abstract of South Australian Statistics* which presents an up-to-date and reasonably comprehensive range of data on economic and social conditions in this State, a *Pocket Year Book of South Australia* which contains a wide range of statistical information in a compact form and a *Statistical Register of South Australia* (issued both in parts and in one volume) in which is provided, without comment, detailed historical and current statistics in many fields. The full list of these publications appears on page 647.

Individual Year Books and a comprehensive range of statistics are also published by the Commonwealth Statistician covering the whole of Australia (but giving a deal of information about the States) and by the other Deputy Commonwealth Statisticians for their States. The details of such publications are available at each office of the Bureau.

I gratefully acknowledge the valuable assistance given by contributors of special articles and by the various government departments and firms who supplied the photographs and plates used. I also appreciate the continuing interest in this project shown by the Government Printer and his staff. My special thanks are tendered to Mr I. R. Collins, B.Ec., A.A.S.A., under whose direction the Year Book was compiled by Mr G. D. Carey, B.Ec., A.A.S.A. (Senior).

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September 1969

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## **PART 1**

# **NATURAL ENVIRONMENT**

### **1.1 DESCRIPTION**

#### **Size and Location**

The State of South Australia has the ocean to the south and is flanked on the other sides by land. It lies south of the 26th parallel of south latitude and has as a western boundary the 129th meridian of east longitude. The eastern boundary, north of the River Murray, corresponds with the 141st meridian, while to the south, between the river and the sea, the boundary lies approximately two miles to the west of this meridian.

The State is approximately 746 miles from east to west at the northern boundary and 710 miles at the head of the Great Australian Bight; from north to south it varies from 391 miles near the western extremity to approximately 823 miles near the eastern boundary; its coastline, excluding islands, measures approximately 2,100 miles. South Australia covers a total area of 380,070 square miles (one-eighth of the area of the Australian continent); however, approximately one-third of this area has no significant use and over one-half is devoted to extensive pastoral pursuits. Approximately 99 per cent of the population live south of the 32nd parallel.

South Australia uses what is known as Central Standard Time, which is nine hours thirty minutes ahead of Greenwich Mean Time, and thirty minutes behind Eastern Standard Time used by States on the east coast of Australia.

#### **Physical Features**

South Australia is a land of generally low relief, the inland area being largely covered by featureless plains, or sand and gibber deserts. Approximately 50 per cent of the State is less than 500 feet above sea level and over 80 per cent less than 1,000 feet. Even the dominant mountains, the Mount Lofty-Flinders system, nowhere exceed 4,000 feet and nowadays at no point prove really difficult barriers to communication.

On the other hand the pattern of communication and development has been greatly influenced by the nature of the coastline, the south-easterly trend of which



is interrupted by two major indentations, Spencer Gulf and Gulf St Vincent. These two relatively shallow depressions cut into the settled areas a distance of approximately 200 and 100 miles respectively. The resultant natural divisions earlier tended to develop their own centres and many ports were constructed along the coast in spite of the fact that, with the exception of the area between Port Lincoln and Fowlers Bay, the nature of the coastline is not particularly accommodating to port development.

Kangaroo Island, approximately 260 miles in circumference and covering 1,680 square miles, is by far the predominant island of the South Australian coastline. There are, however, approximately 100 islands in all, relatively few of which are utilised.

The vast ocean area to the south results in a more temperate climate than would be suggested by the latitude, while the trend of the coastline exposes the coastal areas to the westerly rain-bearing air streams.

The most important mountains are the Mount Lofty-Flinders Ranges system. Kangaroo Island structurally belongs to these ranges which, together with parallel subsidiary ranges, extend north from Cape Jervis some 500 miles to the northern end of Lake Torrens. In the south the rounded hills of the Mount Lofty Ranges are of comparatively low altitude with Mount Lofty itself 2,334 feet. The western side of these ranges presents steep scarps to the Adelaide plains while on the eastern side more gentle slopes merge into the Murray basin.

To the north the Flinders Ranges are of greater height and sharper outline than their southern counterpart. St Mary Peak of 3,900 feet is the highest point. North of Peterborough there is a divergence from the main range which stretches *via* the Olary Ridges to the Barrier Range and Broken Hill. In the far north the ranges again diverge; one spur circling the northern end of Lake Torrens and the other ending north of Lake Frome. The Flinders Ranges contain some unusual basins of which Wilpena Pound is perhaps the best known.

The Mount Lofty-Flinders chain has an important climatic influence; higher rainfall on the plains to the west of the ranges, and in the ranges themselves, with relatively dry conditions in the Murray basin.

The western half of the State is largely occupied by a low plateau over which an intermittent series of low ranges, including the Warburton, Stuart, Denison, Peake and Everard Ranges, stretch from the Flinders to the somewhat higher Musgrave Ranges in the far north-west. Mount Woodroffe (4,970 feet) the highest point in the State, is located in the Musgrave Ranges.

The comparatively low hills of the Gawler Ranges form the northern side of the Eyre Peninsula triangle, and to the west of Whyalla lie the economically important Middleback Ranges. Isolated peaks of volcanic origin are found in the extreme south-east of the State.

The River Murray, which drains approximately one-seventh of Australia, enters the sea in South Australia and is the State's only major river. The fall of the Murray is very slight, dropping less than seventy feet over the 399 miles between the border and the sea. For the 134 miles to Overland Corner the river occupies a wide valley and then passes through a narrower steeper-sided valley to Lakes Alexandrina and Albert at its heavily silted mouth.

Surrounding the northern Flinders Ranges is a series of vast lakes which are in reality lakes only after particularly heavy rainfall, normally appearing as shallow depressions with a salt or clay encrusted surface. Lake Eyre, the largest of these, is thirty-nine feet below sea level and is fed by a series of intermittently

flowing rivers, including the Finke, the Diamantina and Cooper Creek, which traverse the plains of the north-east, constituting one of the largest areas of internal drainage in the world. To the south of Lake Eyre are Lakes Gairdner, Frome and Torrens, the last named being 150 miles in length.

### **General Geological Background**

The physiography of the State very accurately outlines the geological features, the areas of higher relief being the basement rocks protruding as cores or ridges through the flat-lying younger sediments of the basin areas.

The main physiographic feature is the Kangaroo Island-Mount Lofty-Flinders Ranges arc of hills, which, although of no great elevation, extend over a distance of 500 miles. The rocks of this arc, which are predominantly ancient sediments, have been folded and faulted in a spectacular manner providing many classic examples of textbook tectonics; they owe their present prominence to repeated fold and uplift movements throughout geological time. The hills of the chain rise from the coastal plains of Gulf St Vincent to the west, the plains of the Murray River to the east, and the Lake Frome and Lake Eyre plains in the north-east and north. The basement rocks are also exposed to the west of Spencer Gulf, but here they are more completely levelled off, and constitute a geological shield of greater antiquity than the Mount Lofty arc.

In the far north-west of the State, the ancient basement is again exposed in the east-west trending hills of the Musgrave and Everard Ranges. These ranges form the northern boundary of the Great Victoria Desert, which with the great coastal Nullarbor Plain, covers the western half of the State.

There is thus a broad geological picture of ancient crystalline or partly crystalline folded rocks forming highland chains and provinces, surrounded by relatively young and soft flat-lying sediments which have accumulated in deep troughs and basins during periodic transgressions and regressions of the sea throughout most of geological time.

It is in the hard rock provinces that are found the deposits of minerals and rocks which have played an important role in the industrial development of the State. The basin areas are important as sources of artesian water and are currently the areas in which vigorous petroleum exploration is proceeding and in which important natural gas discoveries have already been made.

In general, the younger sediments of the basin areas do not provide good agricultural soils except in the higher rainfall areas of the south and south-east of the State, while the best agricultural lands lie in the hard rock provinces of the Gawler-Barossa-Clare regions of the central ranges where relatively good rainfall is associated with more mature soil conditions.

## **1.2 CLIMATE AND METEOROLOGY**

In the Southern Hemisphere, because of the extensive ocean areas and the absence of a broad land mass connecting the Antarctic with the tropical regions, the southern continents are not subject to the same range of weather extremes experienced in northern countries at similar latitudes. The ameliorating effect of this land-sea distribution is particularly noticeable in southern South Australia.

Briefly, the basic features of the South Australian climate are hot, dry summers with relatively mild nights, and cool but not severe winters with most rainfall occurring during the months of May, June, July and August.

METEOROLOGICAL OBSERVATIONS

Meteorological services throughout Australia are administered by the Commonwealth Bureau of Meteorology and the Regional Office of the Bureau in Adelaide directs operations throughout South Australia. Daily weather reporting stations are established at over sixty representative localities and there are over 750 rainfall recording stations.

Station weather observations telegraphed several times a day provide the basic information for the weather forecasting and warning services provided by the Regional Office and for aircraft flight forecasts provided by the Adelaide Airport. These observations are also collated in bulletins, maps and reports issued for public information. The reports include climatic surveys which are studies of climatic variations over defined regions of the State.

RAINFALL

Average Annual Rainfall

South Australia is by far the driest of the Australian States and Territories with just over four-fifths of the State receiving an average of less than 10 inches of rain annually. An indication of the shortage of rain in the State is given in the following table which compares the relative distribution of rainfall in South Australia and in Australia as a whole.

Distribution of Rainfall, South Australia and Australia

Average Annual Rainfall	Proportion of Total Area	
	South Australia	Australia
	per cent	per cent
Under 10 inches.....	82.8	39.0
10 and under 15 inches .....	9.4	20.6
15 and under 20 inches .....	4.5	11.2
20 and under 25 inches .....	2.2	9.0
25 and under 30 inches .....	0.8	7.2
30 and under 40 inches .....	0.3	6.1
40 inches and over .....	(a)	6.9
Total .....	100.0	100.0

(a) Less than 0.05 per cent—an area of the order of 75 square miles in the Mount Lofty Ranges.

Over the southern half of South Australia the main source of rain comes from showers associated with unstable moist westerly airstreams occurring fairly regularly during winter. The wettest part of the State is in the Mount Lofty Ranges, immediately east of Adelaide where the average annual rainfall, in the vicinity of Stirling, is about 47 inches. The Flinders Ranges have the effect of extending a strip area of higher rainfall well to the north.

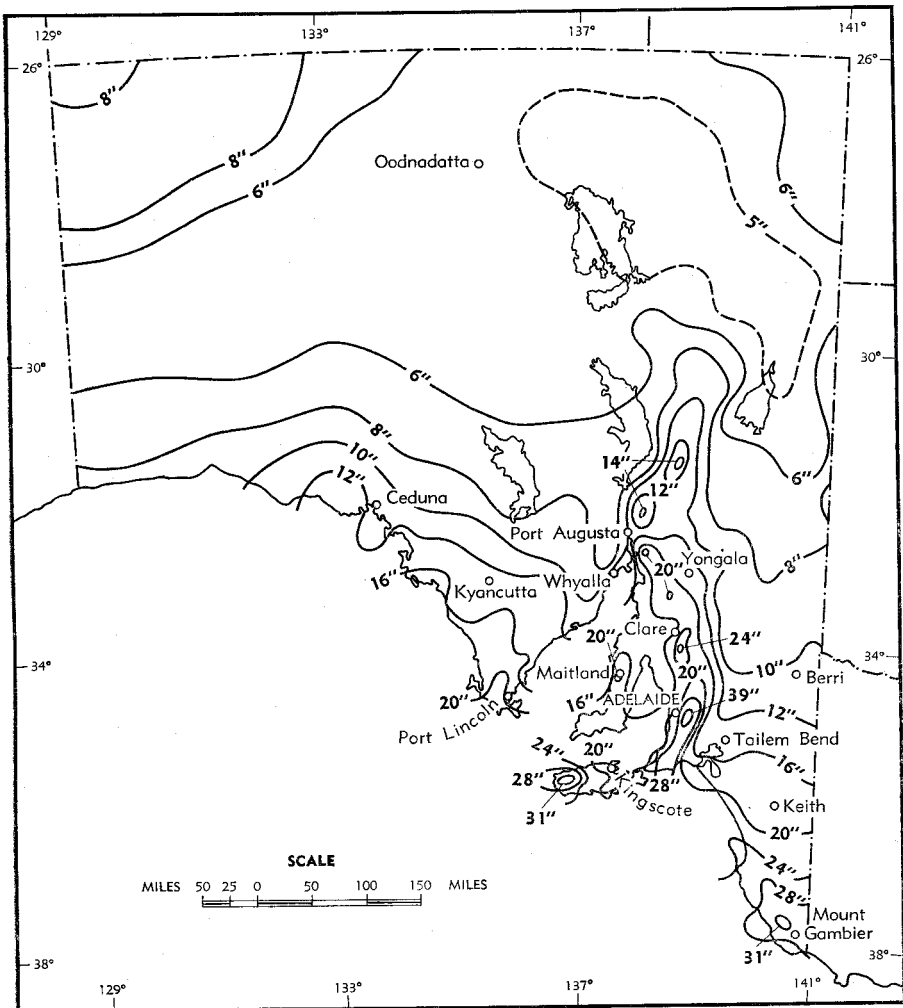
As can be seen from Map 1 the isohyets generally show highest annual averages along the ranges and southern parts of the coast. Averages fall off rapidly to less than 10 inches within 100 to 150 miles inland, and then decrease more gradually to a minimum of below 5 inches in the vicinity of Lake Eyre. This area is the driest part of Australia, and there have been protracted periods when the average there has been less than 3 inches.

**Seasonal Distribution of Rainfall**

Those areas of the State with the higher average annual totals also show a marked winter maximum of rainfall. From November to March the fall is slight, but is rarely completely absent. However, a high rate of evaporation during the summer means that in general these summer rains are not significant from the agricultural point of view.

**SOUTH AUSTRALIA**  
**AVERAGE ANNUAL RAINFALL**

All years of records  
Isohyets in inches



MAP 1



The first significant falls generally arrive during April or May, and June, July and August are usually the wettest months, with rains tending to show a marked decrease during September and October.

By contrast the occurrence of rain over interior districts is quite erratic, but southern parts of the interior still exhibit a discernible trend for winter maxima. Records collected over the years from this northern half of the State show that heavy rains of up to 3 inches may occur in any month of the year, but on the other hand at least two or three months without any significant rain at all are experienced practically every year.

Average monthly rainfalls at seventeen selected recording stations are shown in the following table. The average number of rain days (*i.e.* days receiving one point or more of rain) are also shown.

### Average Rainfall and Days of Rain: Selected Stations, South Australia

*For all years of records to end of 1966*

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
AVERAGE RAINFALL (Points)													
Adelaide .....	76	76	95	172	271	290	261	244	201	174	122	104	2,086
Berri .....	65	86	44	64	109	101	96	106	105	95	77	81	1,029
Ceduna .....	28	63	53	72	147	159	150	142	91	94	75	66	1,140
Clare .....	95	95	96	188	293	318	317	309	278	220	140	119	2,468
Keith .....	69	88	82	133	223	208	213	217	203	170	123	105	1,834
Kingscote .....	58	68	72	139	239	294	309	250	181	146	95	76	1,927
Kyancutta .....	45	69	51	85	142	153	166	161	121	110	95	85	1,283
Maitland .....	68	81	79	171	252	277	259	241	196	169	114	85	1,992
Mount Gambier ...	130	112	142	246	338	386	422	392	306	251	181	160	3,066
Oodnadatta .....	64	78	49	22	39	56	27	25	29	40	31	48	508
Port Augusta .....	59	66	66	75	102	107	77	88	88	91	71	63	953
Port Lincoln .....	52	59	72	138	227	298	306	258	192	140	91	72	1,905
Port Pirie .....	69	69	72	115	153	167	125	138	130	122	86	84	1,330
Stirling .....	149	142	170	372	563	711	642	609	487	385	241	192	4,663
Tailem Bend .....	69	81	83	109	170	161	157	161	156	146	111	111	1,515
Whyalla .....	68	87	65	68	108	101	86	97	96	98	85	84	1,043
Yongala .....	76	79	64	101	142	165	155	177	147	125	106	99	1,436
AVERAGE NUMBER OF DAYS OF RAIN (a)													
Adelaide .....	4	4	5	10	13	15	16	16	13	11	8	6	121
Berri .....	3	4	3	6	8	9	11	10	7	7	5	4	77
Ceduna .....	3	3	3	6	10	12	12	11	8	7	6	4	85
Clare .....	5	5	5	10	12	15	16	16	12	11	8	7	122
Keith .....	4	4	4	9	12	13	15	15	12	11	8	6	113
Kingscote .....	4	4	5	10	14	16	19	18	13	11	8	7	129
Kyancutta .....	4	4	4	7	12	12	14	14	10	9	7	5	102
Maitland .....	4	5	5	10	13	15	17	16	12	11	8	6	122
Mount Gambier ...	7	8	9	14	17	18	21	20	17	16	13	10	170
Oodnadatta .....	3	2	2	2	3	3	2	2	2	3	3	3	30
Port Augusta .....	3	3	3	5	7	7	10	9	6	6	6	4	69
Port Lincoln .....	4	5	5	11	15	17	19	19	13	12	8	6	134
Port Pirie .....	3	3	3	6	8	10	11	10	8	7	6	4	79
Stirling .....	6	7	7	13	15	17	18	18	15	14	11	9	150
Tailem Bend .....	4	5	4	9	12	13	13	13	11	10	8	6	108
Whyalla .....	3	3	3	5	6	7	9	8	6	6	5	4	65
Yongala .....	4	4	4	7	10	12	14	13	9	8	7	5	97

(a) Other than for Adelaide figures relate to standard 30 year period 1931-1960.

### Rainfall Probability

Rainfall probability is the likelihood, expressed as a percentage, that a minimum rainfall will be received during a stipulated period.

A more detailed discussion, together with maps and with special reference to the cereal growing season was included on pages 6-9 of *South Australian Year Book* 1966.

### Rainfall Intensity

Long sustained periods of intense rainfall are rare in South Australia. However, occasionally there are very intense falls lasting only a few minutes—for example in Adelaide several falls at a rate of more than 400 points per hour over a five minute period have been recorded. These would be thunderstorm rains, and can cause considerable damage to crops and to light or freshly worked soils.

The most notable falls of rain which have occurred within a period of twenty-four hours ending at 9 a.m. were at:

Ardrossan (18 February 1946) .. .. .	8.10in
Carpa (18 February 1946) .. .. .	7.83in
Hesso (18 February 1946) .. .. .	7.36in
Wilmington (1 March 1921) .. .. .	7.12in
Wynbring (28 February 1921) .. .. .	7.00in

Other Yorke Peninsula towns besides Ardrossan also recorded over 7 inches on 18 February 1946. These, however, are very much below the 24-hour falls which have been recorded in tropical parts of Queensland and Western Australia. Crohamhurst in Queensland once recorded 35.71 inches in one day, and more than twenty other centres in Queensland have had daily readings exceeding 24 inches.

### Snow and Hail

The occurrence of snow in South Australia is infrequent and is mainly confined to the Mount Lofty Ranges and southern Flinders Ranges. Most falls are very light and do not persist long due to the relative warmth of the ground. Collated reports of snow in the Mount Lofty Ranges show a total of 116 days of snow experienced over a period of 124 years. While most falls have occurred during the months June to September, snow has been experienced as early as 25 April (1916) and as late as 3 December (1955).

Hail falls most frequently about the southern coasts and ranges during the winter. Further to the north, hail can be experienced with summer thunderstorms and some of the largest hailstones have been reported from northerly parts of the State. Tornadoes and tornadic squalls are, in almost all cases, accompanied by hail.

### Floods

Various localised areas of South Australia are prone to flooding. However, most local flooding is associated with intense falls and consequently is of comparatively short duration. Exceptions have occurred in parts of the south-east of the State where due to topography and other soil factors, stretches of water can persist for days and even weeks.

Extensive rises in the River Murray levels have at times caused damage to levees and installations along the banks. During 1956, following an excessive snow melt in the Australian Alps, prolonged flooding was experienced in many areas adjacent to the main course.

### Droughts

When dry conditions persist over wide areas for long periods of time, drought, the worst of all Australian climatic hazards, is experienced. The worst years in South Australia were 1863-67, 1896-98, 1901-03, 1913-16, 1926-30, 1939-40, 1943-45, 1959-62 and 1965 in the interior, and 1859-60, 1884-86, 1895-98, 1911-15, 1928-29, 1943-45, 1959 and 1967 in the settled areas.

The driest year in terms of actual rainfall was 1967, when an all-time low figure for the year of 10.11 inches was recorded in Adelaide. However, the 1914 drought is generally recognised as being the most severe experienced, and in that year districts where drought was almost unknown were seriously affected. The average wheat yield fell to only 1.41 bushels per acre, little more than one tenth of the yield in previous seasons. In places the River Murray was just a series of waterholes.

The northern areas suffer more frequent droughts than areas near the coast. In 1896 the track north-west of Port Augusta was closed to all traffic because of the drought stricken nature of the country. At about this time the drought was particularly severe in the north-east of the State, and this pastoral country was entering its eighth consecutive year of drought before relief rains fell in March 1902.

A more detailed discussion with special reference to rainfall deciles appeared in the *South Australian Year Book* 1967. Further details of droughts appear in the Bureau of Meteorology publications *Droughts in Australia* by J. C. Foley (Bulletin No. 43) and *Rainfall Deciles as Drought Indicators* by W. J. Gibbs and J. V. Maher (Bulletin No. 48).

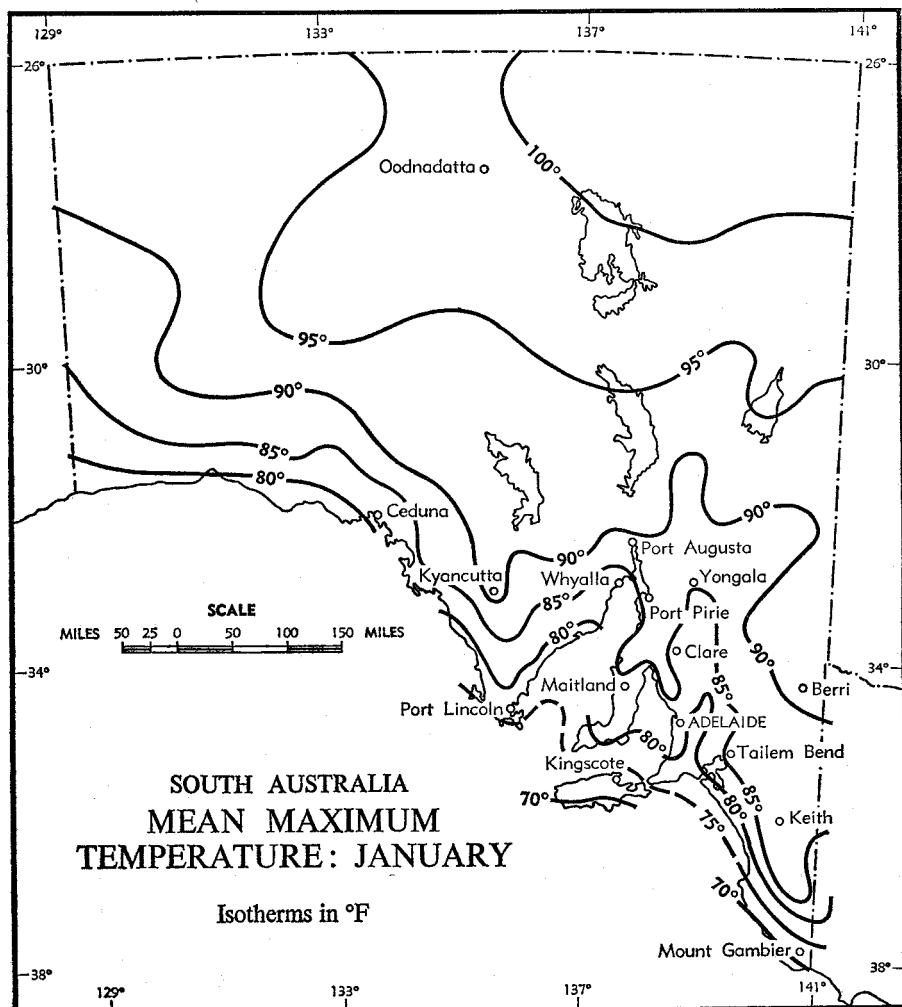
## TEMPERATURE

### Seasonal Temperature Conditions

Temperature is normally recorded under standard conditions in a Stevenson screen. Isotherms of the average maximum temperatures in a mid-summer month (January) and of the average minimum temperature in a mid-winter month (July) are shown on Maps 2 and 3 respectively. The isotherms are more or less parallel to the coastline but the cooling effect associated with higher altitudes of the Mount Lofty and Flinders Ranges is clearly shown.

From December to February it is generally warm to hot throughout the State but sea breezes frequently bring some relief to the coastal districts. In locations more than fifty miles inland maximum daily temperatures usually exceed 90°F and are quite often over 100°F. In general, areas to the north of the 90°F isotherm on the January map average more than twenty days annually during which the maximum temperature exceeds 100°F; while only on the extreme south-east coastal fringe and on Kangaroo Island does the average number of such 'century days' fall below five per year. Air masses prevalent at this time of the year are relatively dry and hence cooling during the night is marked—a fall of 20°F to 30°F from day to night is usual, making the nights reasonably pleasant.

During March temperatures begin to fall and continue to do so during April and May, the first frosts of the year often being experienced during this period. The three coldest months are June, July and August, with the coldest areas along the highlands. In those parts of the State east and south-east of the ranges, the mean temperature for the latter months is near or just below 50°F, and these low temperatures cause vegetation growth to become very slow, although it does not cease altogether.

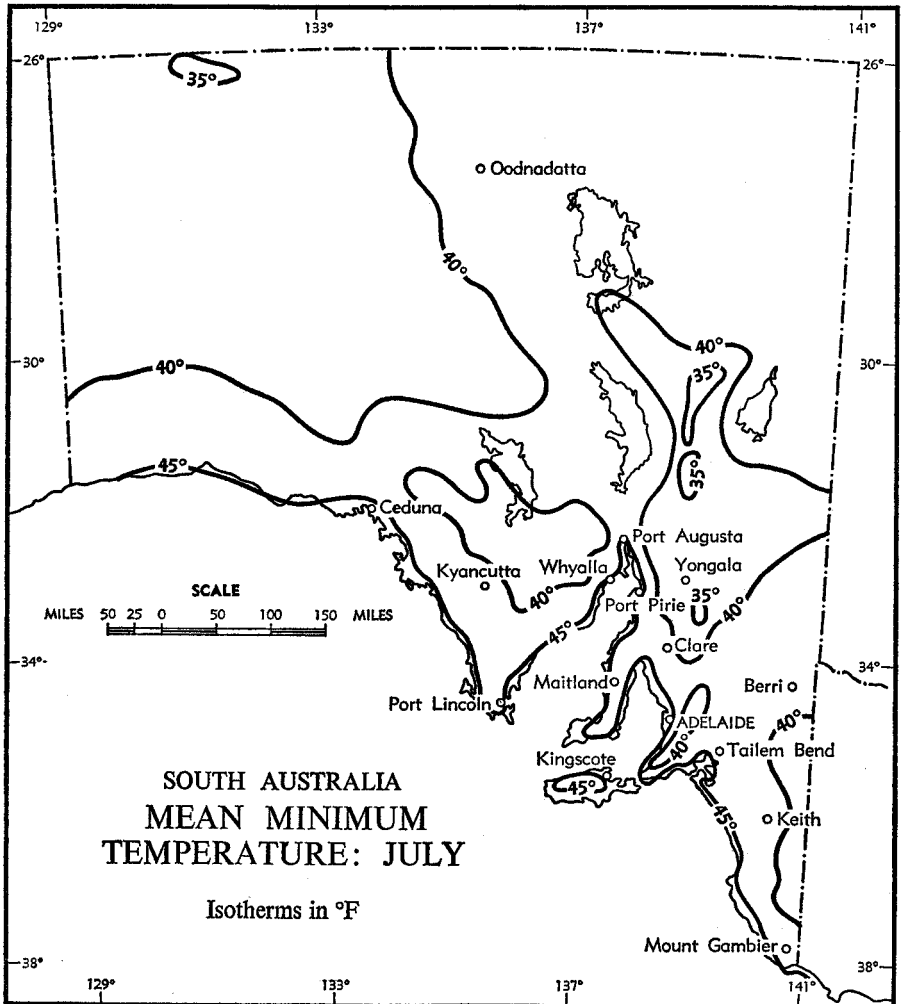


MAP 2



In the spring months, September to November, with gradually rising temperatures and longer hours of sunshine, crops and pastures grow rapidly. In this period severe frosts are sometimes experienced and these can cause considerable damage to fruit crops during the bud, flower, and small fruit stages.

When a pressure distribution causes very dry and warm air from the rapidly heating interior to flow over the State for two or three consecutive days, developing crops can be seriously affected by the desiccating effect of this air mass.



MAP 3

Monthly mean maximum and minimum temperatures at seventeen selected recording stations within the State are shown below. These are based as nearly as possible on a standard period for comparison purposes.

### Mean Maximum and Minimum Temperatures: Selected Stations, South Australia

Recording Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
MEAN MAXIMUM (°F)													
Adelaide .....	84.8	85.7	81.3	73.0	66.8	61.0	59.9	62.3	66.8	72.5	78.1	82.6	72.9
Berri .....	87.7	86.3	82.3	72.5	66.3	60.4	59.9	63.4	69.5	74.5	80.7	85.8	74.1
Ceduna .....	81.5	79.1	79.9	73.5	67.9	64.1	62.6	65.5	69.7	72.9	76.1	80.2	72.7
Clare .....	84.4	84.9	80.2	70.4	63.0	56.8	55.7	58.6	63.9	70.6	77.0	82.0	70.6
Keith .....	87.0	82.3	80.9	70.7	64.1	59.3	58.6	61.0	66.7	70.2	76.3	82.1	71.6
Kingscote .....	72.5	73.0	70.8	66.5	62.7	58.8	57.6	58.2	60.8	64.3	67.6	70.7	65.3
Kyancutta .....	90.7	88.9	86.4	76.8	70.7	63.8	62.9	65.9	72.0	77.2	83.0	88.4	77.2
Maitland .....	84.5	85.0	79.0	72.0	65.0	60.0	58.5	61.5	66.0	71.5	77.5	82.0	71.9
Mount Gambier ...	74.2	75.9	72.7	66.5	61.4	57.0	56.2	58.1	61.1	65.0	68.3	71.9	65.7
Oodnadatta .....	98.5	96.4	91.4	81.9	73.3	67.1	66.3	70.6	78.8	84.9	91.6	96.9	83.1
Port Augusta .....	89.5	89.5	85.2	77.4	70.3	63.6	62.8	66.5	72.4	78.3	83.8	87.7	77.3
Port Lincoln .....	77.4	77.7	74.8	70.3	65.8	61.3	60.2	61.6	64.6	68.2	71.8	75.2	69.1
Port Pirie .....	89.2	88.8	85.6	76.6	69.2	62.8	61.7	65.0	71.3	76.6	82.6	86.8	76.3
Stirling .....	75.6	77.1	73.1	64.3	58.3	52.5	51.3	53.8	58.0	63.1	68.2	72.8	64.0
Tailem Bend .....	84.5	82.5	79.7	72.0	66.0	61.0	59.8	61.8	67.9	71.0	76.2	81.0	71.9
Whyalla .....	83.6	84.1	80.6	74.1	68.9	62.9	62.3	64.7	68.9	74.6	78.9	82.8	73.9
Yongala .....	85.9	85.8	80.7	70.5	62.4	55.5	54.5	57.6	63.8	71.2	78.3	83.5	70.8
MEAN MINIMUM (°F)													
Adelaide .....	61.0	61.8	59.1	54.4	50.8	46.6	45.4	46.2	48.3	51.7	55.4	58.9	53.3
Berri .....	59.1	58.9	56.0	50.0	46.0	42.7	41.5	42.6	45.7	49.8	54.0	57.6	50.3
Ceduna .....	58.8	59.3	56.4	51.0	46.9	43.5	43.8	44.2	47.0	50.0	53.8	57.7	51.0
Clare .....	56.1	56.7	52.8	46.8	42.6	39.6	38.1	38.9	41.2	45.2	49.9	54.1	46.8
Keith .....	53.7	52.7	50.2	47.5	44.3	42.5	40.2	41.1	43.3	46.0	48.6	51.9	46.8
Kingscote .....	58.3	59.5	58.0	54.5	51.9	49.1	47.6	47.3	48.7	50.8	53.7	56.7	53.0
Kyancutta .....	57.4	56.7	53.7	48.4	44.4	41.2	40.6	41.1	43.3	46.7	51.4	55.3	48.4
Maitland .....	58.0	58.5	56.5	51.5	47.5	45.0	43.5	44.0	45.0	47.5	51.0	54.5	50.2
Mount Gambier ...	53.5	54.8	52.4	49.5	46.4	43.5	42.4	43.1	45.1	46.9	49.6	52.0	48.3
Oodnadatta .....	71.6	71.0	66.0	57.3	49.9	44.3	42.6	44.8	51.3	58.3	64.3	69.7	57.6
Port Augusta .....	65.3	66.0	62.1	55.7	50.0	45.9	43.9	45.8	49.5	54.8	59.7	63.5	55.2
Port Lincoln .....	58.5	59.4	57.5	54.1	50.9	48.1	46.4	46.4	47.7	50.1	53.4	56.6	52.4
Port Pirie .....	62.6	63.1	60.3	54.7	50.6	46.4	45.4	46.3	49.0	52.9	57.5	60.9	54.1
Stirling .....	52.0	53.2	50.9	47.2	44.7	41.7	40.7	41.2	43.0	45.1	47.7	50.5	46.5
Tailem Bend .....	56.2	56.8	53.4	49.2	46.8	42.9	41.5	42.7	44.6	48.0	51.2	54.5	49.0
Whyalla .....	63.8	65.0	62.0	55.7	50.5	47.0	43.9	45.8	49.5	53.9	58.6	62.1	54.8
Yongala .....	55.8	56.3	51.7	45.1	40.9	37.6	36.1	36.9	39.4	43.4	49.0	53.7	45.5

The highest temperature recorded in South Australia was 123.2° at Oodnadatta on 2 January 1960, and the lowest 17.4° at Yongala on 16 June 1959.

### HUMIDITY

'Relative humidity' at a particular temperature is the ratio of the actual vapour pressure to the saturated vapour pressure (at that temperature) expressed as a percentage. Since relative humidity depends not only on the actual water vapour content of the air, but also on air temperature, there is a tendency for highest relative humidities to be associated with low temperatures during the early morning hours, and conversely, the lowest relative humidity values tend to occur during the warmest part of the afternoons when measurements of under 20 per cent are not uncommon.

The average index of mean relative humidity has been derived from the ratio of the average 9 a.m. vapour pressure to the saturation vapour pressure at the average mean temperature. Being thus related to the mean temperature this value of relative humidity is a good approximation of the daily mean.

With an average index of mean relative humidity of under 35 per cent in summer increasing to about 50 per cent in winter, the far northern parts of the State experience the lowest values of relative humidity in South Australia. By comparison, most southern parts of the State have an average index of mean relative humidity of about 45 per cent to 55 per cent in summer, increasing to about 70 per cent to 80 per cent in winter.

### SUNSHINE AND CLOUD

The annual average sunshine total (as determined from records of sunshine and average cloudiness) ranges from about 2,000 hours along parts of the southern coastal fringe to 3,500 hours near the northern border of the State. Adelaide has an average of 2,508 hours a year.

December and January tend to be the sunniest months with daily averages reaching a maximum of about ten and a half hours over interior districts. During the June and July winter months daily averages are still as high as seven hours in the far north interior, but over the southern coastal fringe the daily average of just over eight hours for summer is reduced to about three hours during winter.

### WIND

During the summer months winds from the southern quadrants are the most prevalent and a well defined sea breeze is common along the whole of the coastal fringe from October right through to about April and May. During the winter months the north-westerly predominates, but the proportion of west to south-west winds is also relatively high.

South Australia is not subject to the type of sustained wind storms associated with tropical cyclones as in Queensland and tropical Western Australia. However, gales do occur from time to time along the coast during the winter and cause minor damage to buildings and foreshore works. Probably the most noteworthy storm was on 11 April 1948 when the wind averaged over 40 mph for six hours in central and south-eastern districts, and the naval frigate *Barcoo* was grounded at Glenelg and the Glenelg jetty was wrecked. Frequent gusts over 70 mph and a strongest gust of 81 mph were recorded in Adelaide.

Most violent wind squalls are associated with thunderstorms and usually last only a few minutes. It was during such squalls that the highest wind gusts were recorded in South Australia—92 mph at Leigh Creek on 3 December 1953, and also at Adelaide on 13 July 1964.

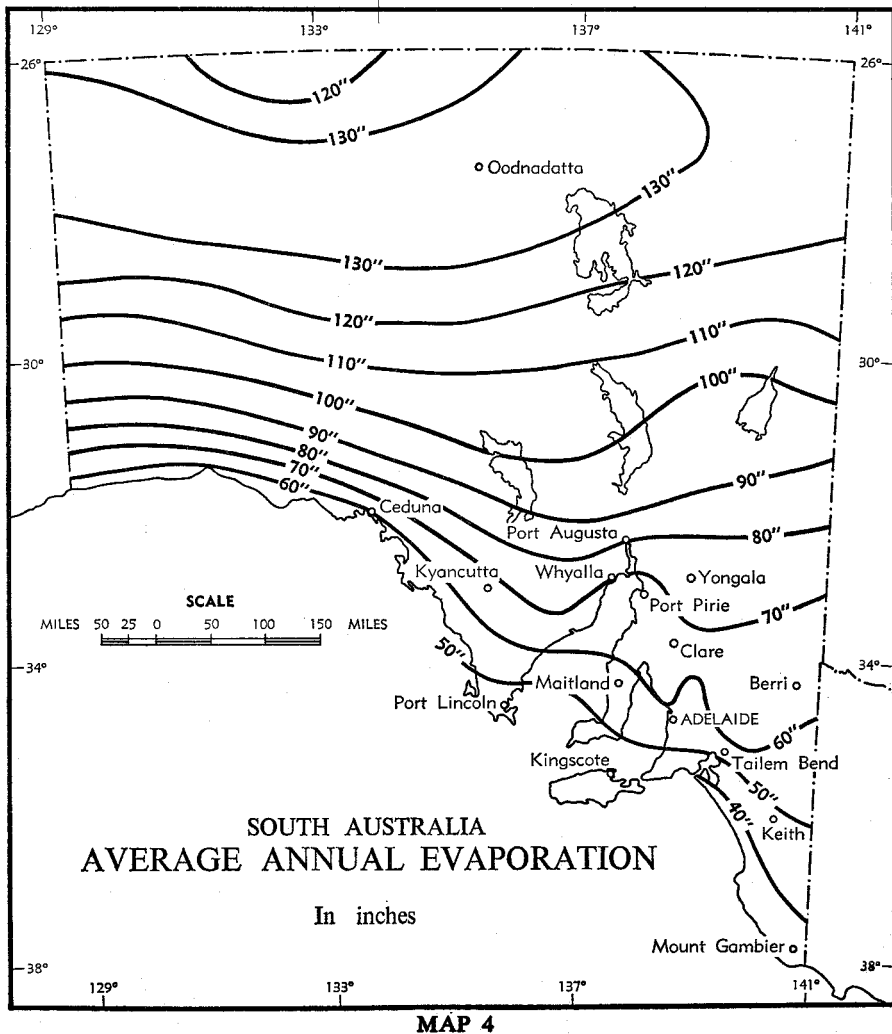
### EVAPORATION

In South Australia most measurements of evaporation have been made with tanks, each 3 feet internal diameter and 3 feet deep, sunk into the soil so that the rim is only an inch or so above the surface.

However, early in 1967 a change-over to the standard American Class A pan was made. These pans, 4 feet in diameter and 12 inches deep, are placed above ground level on wooden stands. Comparative readings are being made between these new pans and the older sunken tanks to determine the differences, if any, between the two methods. Figures for the evaporation for the new pans will not be available for several years.



The annual average evaporation using the sunken tank varies from under 40 inches along the south-east coastal fringe to more than 130 inches over a large area around and to the west of Oodnadatta in the far north (see Map 4). About half the area of the State has an evaporation rate exceeding 100 inches per annum, and this high rate is all the more significant when it is considered that the average annual rainfall over most of the northern half is less than 6 inches. A critical survey of the evaporation network and methods of observation, together with tabulations of the results of Australian observations appears in the Bureau of Meteorology publication *Evaporation in Australia* (Bulletin No. 44).



## CLIMATE OF ADELAIDE

The longest continuous series of weather observations in the Southern Hemisphere started in Adelaide in November 1836 when Sir George Kingston commenced rain gauge readings at his property on the corner of Grote Street and West Terrace. Unfortunately, the earliest figures were mislaid and records are available only from the beginning of 1839. No other regular observations were made until Sir Charles Todd arrived to fill the post of Superintendent of Telegraphs and Government Astronomer in 1856. During the first year or two, observations were made at his private residence in Adelaide and, for some months, in Government House grounds. In May 1860 the Observatory on West Terrace was completed and the instruments were moved to that site.

Temperature records at Adelaide date back to 1858 when readings were first taken from a thermometer placed in a screen known as a Greenwich Stand which failed to protect the thermometer fully from reflected radiation. In 1887 a new series of readings using a standard Stevenson Screen was introduced and this showed maximum temperatures during the warmer months to be slightly lower on average, although most readings were not significantly affected. Both screens were in continuous operation until 1948 when use of the Greenwich Stand was discontinued. For over 100 years the observational site at Adelaide has remained practically unchanged. Minor shifts occurred in 1940 and 1962 but these were within 100 yards of the original observatory site.

Adelaide is the driest of Australia's capital cities, having less rainfall and a lower relative humidity than any other capital. Summer maximum temperatures are high and the record of 117.7°F in the Greenwich Stand on 12 January 1939 is the highest recorded in any of the capital cities.

**Temperature**

In the summer months, maximum temperatures frequently exceed 90°F and from time to time 'heat waves', with readings at or near 100°F for several consecutive days, are experienced. The outstanding heat wave was in January 1939 when fourteen days out of fifteen exceeded 90°F and of those fourteen days nine exceeded 100°F. During this heat wave the record temperature of 116.3°F recorded on 26 January 1858 was exceeded, first on 10 January 1939 when the temperature reached 116.9°F and then two days later on 12 January when the highest ever temperature of 117.7°F was recorded.

July is the coldest month, when the mean maximum is only 59°F with the extreme lowest minimum being 32°F on 24 July 1908. August is only slightly warmer than July, but after August steadily rising temperatures are experienced during the spring months.

**Rainfall**

Adelaide's summer rainfall is light and unreliable. The average monthly fall from January to March is under an inch and completely rainless months in this period are not uncommon. In fact, each of the five months December to April has at some time been recorded as completely dry, and in the period January to March 1893 there were sixty-nine consecutive rainless days. On the other hand, heavy rain is occasionally experienced at this time of the year and on 7 February 1925 rainfall was 5.57 inches—a record for one day. Each month from May to September averages over 2 inches and in this period the rain is fairly reliable. June is the wettest month, but the average is still under 3 inches for the month. The 129-year annual rainfall average is 20.77 inches, and annual totals have ranged from a low of 10.11 inches in 1967 to a high of 30.95 inches in 1851.

## Climatological Data, Adelaide

## (1) Temperature and Relative Humidity

Month	Temperature					Relative Humidity (9 a.m.)		
	Maximum		Minimum		Mean	Mean	Highest Monthly Mean	Lowest Monthly Mean
	Mean	Highest Recorded	Mean	Lowest Recorded				
Years of Record	111	111	111	111	111	100	100	100
	°F	°F	°F	°F	°F	%	%	%
January ..	85.4	117.7	61.4	45.1	73.4	40	59	29
February ..	85.0	113.6	61.7	45.5	73.3	42	57	30
March ....	80.5	110.5	59.0	43.9	69.8	47	58	29
April .....	72.9	98.6	54.6	39.6	63.7	56	72	37
May .....	65.7	89.5	50.4	36.9	58.0	67	76	49
June .....	60.5	78.1	46.8	32.5	53.7	75	84	63
July .....	58.9	74.0	44.9	32.0	51.9	76	87	66
August ....	61.7	85.0	46.0	32.3	53.8	70	78	54
September ..	66.2	95.1	48.1	32.7	57.2	60	72	44
October .....	71.8	102.9	51.5	36.1	61.7	51	67	29
November ..	77.6	113.5	55.2	40.8	66.5	44	58	31
December ..	82.3	114.6	58.8	43.0	70.6	40	56	31
Year ..	72.4	117.7	53.2	32.0	62.8	53	87	29

## (2) Rainfall and Wind

Month	Rainfall				Wind			
	Mean	Highest During Period	Highest in One Day	Mean Days of Rain	Average Speed	Highest Gust	Prevailing Direction	
							9 a.m.	3 p.m.
Years of Record	129	129	129	129	15	51	51	51
	In	In	In	No.	MPH	MPH		
January ..	0.76	3.31	2.30	4	7.8	72	SW	SW
February ..	0.76	6.09	5.57	4	7.5	66	NE	SW
March ....	0.94	4.59	3.50	5	6.9	78	S	SW
April .....	1.71	5.81	3.15	10	6.9	81	NE	SW
May .....	2.70	7.75	2.75	13	7.0	70	NE	NW
June .....	2.88	8.58	2.11	15	7.4	67	NE	N
July .....	2.61	5.44	1.75	16	7.3	92	NE	NW
August ....	2.43	6.20	2.23	16	7.9	75	NE	SW
September ..	2.01	5.83	1.59	13	8.0	69	NNE	SW
October .....	1.73	5.24	2.24	11	8.4	75	NNE	SW
November ..	1.21	4.45	2.96	8	8.4	81	SW	SW
December ..	1.03	3.98	2.42	6	8.2	75	SW	SW
Year ..	20.77	30.95	5.57	121	7.6	92	NE	SW

## (3) Other Conditions

Month	Mean Daily Sunshine	Clear Days (a)	Mean Amount of Cloud (b)	Days of Fog	Days of Lightning	Amount of Evaporation	Vapor Pressure 9 a.m.	Mean Barometric Pressure (d)
Years of Record	86	50 (c)	100 (c)	68	96	95	30 (c)	111
	Hours	No.		No.	No.	In	In	Mb.
January ..	9.9	12.4	3.1	0.0	2.1	9.29	0.327	1013.3
February ..	9.3	10.8	3.3	0.0	1.5	7.52	0.352	1014.3
March ....	7.8	11.0	3.5	0.0	1.7	6.26	0.332	1017.2
April .....	5.9	7.0	4.5	0.0	1.5	3.78	0.329	1019.9
May .....	4.8	4.7	5.1	0.4	1.5	2.30	0.313	1020.1
June .....	4.2	4.0	5.3	1.1	1.5	1.47	0.294	1019.7
July .....	4.3	3.7	5.2	1.3	1.5	1.47	0.282	1019.9
August ....	5.2	5.0	4.9	0.6	1.8	2.09	0.282	1019.1
September ..	6.1	5.9	4.6	0.2	1.8	3.18	0.289	1017.6
October .....	7.2	5.4	4.5	0.0	2.7	5.03	0.287	1015.8
November ..	8.5	6.8	4.2	0.0	3.0	6.78	0.292	1015.1
December ..	9.4	9.1	3.7	0.0	2.2	8.62	0.322	1013.3
Year ..	6.9	85.8	4.3	3.6	22.8	57.79	0.308	1017.1

(a) With less than two-eighths cloud.

(b) Scale 0 (clear) to 8 (overcast) at 9 a.m. and 3 p.m. daily.

(c) Standard 30-year normal, 1931-60.

(d) Mean of 9 a.m. and 3 p.m. readings corrected to sea-level.



**Other Conditions**

Relative humidity in Adelaide is the lowest of all capital cities in Australia and is at its lowest in January when the average 9 a.m. reading (which approximates the average for the whole twenty-four hours) is 39 per cent. This low value of the relative humidity explains why the summer in Adelaide, even during a heat wave, is not unduly severe for personal comfort. In fact, the relative humidity is very low for most months of the year, only becoming higher in winter, with the average at 9 a.m. reaching as high as 75 per cent in June and July.

Adelaide is not subject to violent sustained wind storms. The prevailing wind during the day in summer is a south-westerly sea breeze which is well defined throughout the months October to April. Another common wind during summer, known locally as the 'gully wind', blows from the east or south-east out of the Adelaide hills (more particularly at night) and becomes very strong and gusty at times. In winter the prevailing wind during the day is north-westerly with a high proportion of south-westerlies.

**WEATHER CONDITIONS IN SOUTH AUSTRALIA: 1967 AND 1968***Autumn 1967*

Apart from small sections in the north of the State, rainfall during autumn, in contrast to summer, was well below average, with some deficits of up to 8 inches being recorded.

Due to the general lack of clouds and rains, temperatures tended to be above average.

*Winter 1967*

Similar to autumn, the winter rainfall over most of the State was markedly below average. August provided a return to more of a winter type weather pattern but this effect was far outweighed by the dry June and July.

Temperatures were about average to a little below normal.

*Spring 1967*

Very markedly below average rainfall with most of the spring rain being recorded in September. The State as a whole received 66 per cent of average rainfall.

Temperatures tended to be about average over the southern parts of the State. However, the northern parts showed a slight rise on average.

*Summer 1967-1968*

Above average rainfall over parts of the State, but not the interior, south-east or western districts. Most rain fell during January and February, with some stations reporting more than their average annual total for the two months. Floods and washaways severely restricted operations on both the Trans-Australian and the Central Australia railways.

Temperatures showed a marked increase on average over the State as a whole.

*Autumn 1968*

Rainfall was above average for the entire State, and the northern and interior districts received twice the normal amount.

Temperatures were generally about normal, being above average until mid-April and the 'season break', then below average for the remainder.

*Winter 1968*

Rainfall was above average for all the State except for small areas in the Lower Murray, Murray Mallee and South Eastern districts.

Temperatures were generally about average to slightly below, day time maxima being below normal for most of the season.

*Spring 1968*

Rainfall in the interior districts was below normal by up to 70 per cent in places. In the remainder of the State the coastal areas generally received above normal rains while other districts received about or just below normal rain.

Cold spells were more common than usual and some record and near record low day-time temperatures were recorded.

*Summer 1968-1969*

Rainfall was well above normal throughout most of the State, but was 10 per cent below normal in the Far North. Exceptional rains fell over much of the State during February with some stations recording five to six times the normal monthly amount.

Temperatures were about average with hot spells being frequent in January.

## 1.3 NATURAL RESOURCES

### MINERALS

Iron ore, South Australia's most important mineral, is found in the Middleback Ranges of upper Eyre Peninsula. These ranges which lie to the west of the port of Whyalla and extend discontinuously with broad erosion gaps, from Iron Knob in the north to Iron Duke in the south, a distance of nearly forty miles, are composed primarily of iron-rich rocks and contain the only known deposits of high grade ore in the State. Several deposits of low grade ore have been located on lower Eyre Peninsula.

Barite (barytes) occurs throughout the Adelaide System rocks, in the Mount Lofty and Flinders Ranges, in the Olary district and elsewhere.

By far the largest part of Australian reserves of gypsum are located in South Australia. The deposits have in general been formed in coastal basins, the largest of these occurring at Lake MacDonnell, Stenhouse Bay and on Kangaroo Island. Other deposits, mainly of seed gypsum, are found inland at Moonabie, Lake Fowler, Cooke Plains and along the River Murray.

Conditions in South Australia are ideal for the production of salt from the gulf waters by solar evaporation. Large solar salt works are located at Dry Creek (near Adelaide), Port Pirie (Gulf St Vincent) and Whyalla. Salt is also harvested from several saline lakes, in particular Lake Bumbunga and Lake Fowler.

The opal fields at Coober Pedy and Andamooka supply a very large proportion of the precious opal produced in Australia. The value of opal from South Australia exceeded \$2.8 million in 1967. Most of this is exported to Japan, Hong Kong, the United States and Germany.

Pyrite from the very large deposit near Nairne has been used in the manufacture of sulphuric acid for the fertiliser industry since 1955.

South Australia supplies one third of Australia's talc requirements, the principal occurrences being at Mount Fitton, in the northern Flinders Ranges, and in the Gumeracha district. Other deposits occur at Tumby Bay and in the Barossa Valley near Lyndoch and Williamstown.

Although deficient in bituminous coal resources, South Australia has one deposit of sub-bituminous coal at Leigh Creek. This field supplies two million tons of coal annually for electric power generation at Port Augusta. Lignite deposits at Moorlands and Inkerman-Balaklava are undeveloped.

Limestone and dolomite together form one of the State's most abundant natural resources. The principal deposits being exploited at present are: limestone at Rapid Bay, Penrice, Angaston and Klein Point; limesand at Coffin Bay, and dolomite at Ardrossan. Large reserves of both limestone and dolomite have been established at Brachina in the Flinders Ranges.

South Australia possesses a wide variety of clays including a number of special varieties, the most noteworthy being ball clay at Woocalla, china clay at Mount Crawford and fire clay at Birdwood, Littlehampton, Tea Tree Gully, Booleroo Centre and Lincoln Gap.

In the past, deposits of other minerals have been discovered and exploited until the fields were worked out. The most important of these minerals was copper ore, found initially at Kapunda and at Burra in the 1840s and later (and more extensively) in the Moonta-Wallaroo area. These fields played an important part in the development of the colony in the nineteenth century. Uranium deposits were worked extensively at Radium Hill in the 1950s, while less important deposits of gold, silver-lead ores and manganese ore have been exploited over past years.

The intensive mineral exploration activity of the past few years has led to the discovery of potentially economic copper deposits at Mount Gunson and Kanmantoo and a zinc deposit at Puttapa near Beltana. Elsewhere the presence of molybdenite, nickel and further lead ore deposits have been recorded.

The finding of natural gas at Gidgealpa, Moomba and Daralingie is probably the most exciting of the State's recent mineral discoveries, and the development of the gasfields and the construction of a 486 mile pipeline to Adelaide are now in progress.

Locations of mineral deposits referred to above are shown on Map 5 on page 19.

## UNDERGROUND WATER

South Australia is a State not endowed with a generous rainfall. Only the southern portion of the State, approximately that part south of Port Augusta, receives more than 10 inches of rain annually of which only quite small areas of the South East and the Adelaide Hills have an annual rainfall exceeding 25 inches. The northern part of the State, comprising perhaps three-quarters of the total area, is largely arid with an average annual rainfall of less than 10 inches. As a consequence South Australia is notably deficient in rivers. There is only one large permanent river, the River Murray, flowing through it while the few streams rising in the Flinders and Mount Lofty Ranges are short and seasonal in flow.

Water supply for the metropolitan area of Adelaide is derived from reservoirs in nearby ranges and from the River Murray. Reticulation of surface supplies now covers most of the Adelaide Plains, Yorke Peninsula and portions of Eyre Peninsula. In addition there are a number of small areas whose reticulated supplies are derived from groundwater sources by means of bores.

# SOUTH AUSTRALIA MINERAL RESOURCES AND ARTESIAN WATER



The intake area for the principal water-bearing bed lies along the western margins of the highlands in eastern New South Wales and Queensland. Natural outlets for the water are mound springs which, in South Australia, lie to the west and south of Lake Eyre. Deep bores are necessary to tap the waters of the main aquifer basin in this State from which very large flows have been obtained. The water is generally too saline for any form of irrigation however and its use is confined to stock watering.

The Murray Basin covers 28,000 square miles in South Australia and extends into Victoria and New South Wales. The southern and central portions of the basin contain waters suitable for all purposes while the water quality deteriorates steadily in a north and north-westerly direction from the southern intake area. Very large yields can often be developed from the bryozoal limestone aquifers at shallow depths. The greater part of the water available is used for stock purposes.

The Eucla Basin in the south-west of the State lies partly in South Australia and partly in Western Australia. Although the water quality is poor some is used for stock purposes. Because of the low fertility of the area the basin is of little importance.

The Adelaide Plains Basin is part of the larger St Vincent Basin, lying between the Mount Lofty Ranges and the shores of the gulf. Good quality waters are obtainable in certain portions of this basin which is heavily used for market gardening on the northern Adelaide Plains. The danger of serious depletion of the aquifers by overpumping in this area has been recognised and use is now subject to government control. In the Adelaide metropolitan area groundwater is used from time to time to supplement reticulated reservoir water. Bores constructed for this purpose have yielded up to 15 million gallons per day.

The Pirie-Torrens Basin is a long narrow basin lying west of the Flinders Ranges between Port Broughton and Port Augusta and extending north to the northern end of Lake Torrens. The variable quality of the water from this basin however limits its use mainly to stock watering. The high salinity of the Cowell Basin on the west coast of Spencer Gulf renders it little used and of minor interest only. Several small basins, Walloway, Willunga, Myponga and others are utilised to various extents for stock and pastoral uses.

Groundwater outside the well defined sedimentary basins is often obtainable in useful quantity but its location is not so readily defined. Many bores in folded rocks of the Mount Lofty Ranges and elsewhere provide water supplies for towns, farms and for domestic purposes. Much of the extensive water reticulation of Eyre Peninsula is derived from shallow groundwater basins.

It is estimated that the usage of underground water in South Australia exceeds 100 million gallons daily for all purposes. The exploration for, and development of, underground water resources is a continuing responsibility of the Department of Mines which provides the services of geologists and has an extensive drilling organisation.



## SOILS OF SOUTH AUSTRALIA

## INTRODUCTION

The soils of South Australia constitute one of the State's most important natural resources.

Soils form the upper part of the earth's crust, and are the natural medium in which plants grow. Consequently, they provide man with the greater part of his food and fibre, all his timber, and some of his fuel and drugs, and he places many of his buildings and other structures either on, or in, soils. Furthermore, the capacity of soils to hold water influences not only their own productivity but governs the flow of streams and the occurrence of groundwater. Soils, therefore, are a basic part of the natural environment on which man depends for his existence.

Soils are made up of four prime components; mineral matter, organic matter, soil moisture and soil air. The mineral component is derived from the physical and chemical breakdown of the rocks of the earth's crust, and the organic matter results from the decomposition of plant and animal remains. Activated by energy from the sun together with moisture and air, various physical, chemical and biological processes develop in the organo-mineral system to produce soils as found in the field. They are organised natural bodies which vary markedly, both horizontally across fields and vertically as seen in trenches and cuttings. The vertical section exposed in a trench provides the best means of examining soil, and the pattern of soil thus viewed is termed the *soil profile*. It is this soil profile, and its component layers or horizons, that forms the basic unit for the classification of soils.

## SOILS AND SOIL MAPS

## General

The Division of Soils of the Commonwealth Scientific and Industrial Research Organisation (C.S.I.R.O.), the Soil Conservation Branch of the South Australian Department of Agriculture, the Botany Department of the University of Adelaide, the South Australian Department of Mines and the Land Tax Department of South Australia have worked in defining and mapping the soils of parts of the State.

Modern soil studies began in Australia in 1927 when the Council for Scientific and Industrial Research, now C.S.I.R.O., in association with the University of Adelaide initiated from its head-quarters at the Waite Agricultural Research Institute, the investigation of soil problems of the irrigation settlements along the Murray River. The first such investigation was the soil survey of the Renmark Irrigation Area, the report of which was published in 1929. This survey established methods for studying soils in the field that became basic for many soil surveys carried out since that time. The soil unit defined for such detailed soil surveys is known as the *soil type*, for example 'Renmark sandy loam'. Each soil type has a particular soil profile down to a given depth which in the surveys of irrigation areas was usually 6 feet. The soil profile of a defined soil type always has a specific sequence of soil properties. These are described in terms of texture (sandiness or clayeyness); structure (the way that soil particles are arranged); colour; the presence of organic matter; gravel and stones; calcium carbonate and calcium sulphate; sodium chloride or other salts; acidity or alkalinity (pH); the depths at which changes in the above properties occur and their relative abruptness.

Soil types may be equated with land use and management, such as irrigation and drainage practices, through experience and experiment, so that specific soil

types become favoured for specific agricultural purposes—for example, 'Murray sand' for citrus culture under irrigation. Maps of soil types are commonly published on a scale of one half mile or less to one inch. For larger areas, on a smaller scale, the *soil association* is used as the mapping unit. The simplest kind of soil association is one in which the pattern of distribution of three or four soil types is repeated, sometimes in several different localities. But soil associations may be much more complicated than this; and any repeated pattern of soil distribution in one kind of topography may be termed a soil association. Maps of soil associations are commonly published on a scale of one mile or more to one inch.

Soil type mapping has been concentrated in the irrigation areas, and in other areas, such as the Barossa Valley, where properties are small with intensive culture, and consequently detailed information becomes most valuable. At first soil type maps followed settlement but later they were used to define new areas for settlement and the crops to be planted, particularly for irrigation projects. Again, soil types may be mapped to provide detailed information about specifically chosen small areas so that subsequent soil association mapping of large areas may be soundly based. Soil association mapping has been carried out in many parts of the State and was instrumental in defining areas for the settlement of returned servicemen on the land following the 1939-45 War, notably in the south-east of the State and on Kangaroo Island. Soil type and soil association maps are now available for 16,800 square miles, 4.4 per cent of the 380,070 square miles total area of the State, and are concentrated in its agricultural (southern) portion. Other soil maps of a broader character are available for a further 78,600 square miles.

### Soil Map of South Australia

The coloured soil map of South Australia, which is included in the pocket inside the back cover, has been adapted from the Atlas of Australian Soils, published by C.S.I.R.O. in association with the Melbourne University Press. On this scale of one to two million (about 32 miles to one inch), one cannot show individual soil types, or even associations. Instead, the units are *landscapes*, that is areas of country with broad topographic similarity. Obvious examples of these are the hilly ranges (No. 38a) near Adelaide, the coastal sand dunes (No. 1) and the almost flat clay plains (No. 24) of the South East. Each landscape is shown on the map by reference to its dominant soil. Other soils occur in each landscape, and some occupying only a small proportion of the area may be of great practical importance, for example valley soils in hill country. Such patches cannot be marked on this map but are listed in the booklets which accompany the Atlas of Australian Soils, Sheets 1 and 10.

The forty-eight dominant soils of the map are distinguished from each other, in the first place, by the textural properties of the profile, whether of uniform texture (first letter U; sandy throughout Uc, loamy throughout Um, clayey throughout Uf or Ug); with a gradual change towards more clay with depth (first letter G); with a sudden change from a sandy or loamy surface to a clayey subsoil, here termed duplex (first letter D); or with a large amount of organic matter or peat (first letter O). Other properties are coded until a two letter, three figure symbol, such as UCl.11, which represents the calcareous sands of the coast, is obtained. This is the *principal profile form* which represents all those soil types, both known and unknown, having the same kind of profile form. For further explanation of this factual soil classification the reader is referred to the booklets accompanying the Atlas sheets. The confused names given to soils overseas have been avoided

in the accompanying map and in the Atlas which shows that over 200 principal profile forms dominate the soil landscapes of Australia. In South Australia less than fifty of these occupy large areas and some are not represented at all.

South Australia has been recognised by soil surveyors and others as a land of sand and calcium carbonate (limestone) with relatively small areas of loam and clay soils, and the accompanying map reveals that this is so. Eleven (Nos. 1 to 11) of the forty-eight units are sand soils. They range from the deep Red Siliceous Sands of the Victoria and Simpson Deserts (No. 3) in which chemical and biological processes are evidently minimal; to the acidic Leached Sands (Nos. 6, 7) of the South East in which soil processes have caused dramatic colour changes in the profile, and in some, the formation of organic-iron hardpans in the subsoil (No. 7); and to the Shallow Red-brown Sand Soils (No. 11) which are only a few inches deep and overlie hard limestone which commonly outcrops. Another five units (Nos. 43 to 47) have sandy surface soils over clay subsoils. This combination enhances their capacity to retain moisture and makes them significant soils for development. Calcium carbonate occurs in either the soft or hard forms throughout the profiles of seven units (Nos. 1, 8, 14, 15, 29, 30, 31); in the subsoils only of a further twelve units (Nos. 24, 25, 26, 27, 28, 33, 35, 36, 41, 42, 46, 47); and as limestone below five units (Nos. 11, 14, 19, 20, 21). The Calcareous Earths (Nos. 29, 30, 31) are widespread and where water is available for irrigation have been intensively developed. They may be unique to Australia although there are suggestions of similar soils in North Africa.

The Hard Red Duplex Soils (No. 36) formerly termed red-brown earths (not an overseas name) are the most famous South Australian soils. Famous not only because of the amount of research that has been carried out on them, but because the early settlers were quick to recognise their value for agricultural purposes, soon developing the arc of country north from Adelaide (Nos. 36a, 36c). Again, Maitland (No. 36e) was one of the first successful agricultural settlements on Yorke Peninsula. These soils with their loam and sandy loam surfaces over red-brown friable clay subsoils in which calcium carbonate occurs are suitable for the growth of a wide range of plants. Associated with them are a variety of other soils such as the productive Cracking Clays of Tanunda, Merildin and Salter Springs. Similar Cracking Clay soils occur elsewhere, notably units (Nos. 24, 26a, 26b), while other clay soils of significance are units (Nos. 21, 22). Unfortunately their area is limited.

Moisture imposes severe restrictions on the productivity of South Australian soils as only about 17 per cent of the area of the State enjoys a rainfall of better than 10 inches annually, and only 7.8 per cent receives 15 inches or more annually. The higher rainfall area lies more or less parallel to the coast and may be identified on the soil map by the more diversified and complex pattern of soil landscapes. This coastal strip forms the agricultural belt of the State and it is here that the rainfall allows the adoption of practices designed to improve the productivity of the soils. By contrast, the vast inland (83 per cent of the State) does not have sufficient water to permit such soil improvement, and the art of using the dry inland becomes a matter for conservation.

### PHYSICAL PROPERTIES

The physical nature of soils—their texture, depth, structure, stoniness, slope—is of great importance because of its effect on moisture usage, ease of cultivation and erosion.

### Texture

Within the 17 per cent of the area of the State which receives more than 10 inches average annual rainfall, a very high proportion of the soils have sand or sandy loam surfaces. In considerable areas the sand is several feet or more in depth. Sandy soils, especially if the sand surface is not too deep (18 inches or less for cereals) and is underlain by more clayey horizons, are efficient in giving up moisture to plants in areas of low rainfall. For this reason cereal production has continued in sandy regions of low rainfall, for example the Murray Mallee and Eyre Peninsula, whereas it has failed on loam and clay soils of similarly low rainfall areas, such as the northern marginal lands. By contrast, in the higher rainfall areas, sandy soils underlain by more clayey horizons at moderate depths (Nos. 45, 46) tend to suffer from seasonal waterlogging. Where the sandy soils are very deep (No. 7), moisture quickly moves down, leaching nutrients and causing a droughty, low fertility, surface soil; consequently such soils are more suited to the growth of deep rooting perennial plants. Loam and clay soils in the high rainfall areas generally may be made highly productive.

### Structure

Most of the clay and clay loam soils (Nos. 21, 22, 24, 26a, 26b) used for cultivation in this State have good crumb structure and are therefore comparatively easy to cultivate unless excessively wet. In many of the sandy loam and loam Hard Red Duplex Soils (No. 36), however, structure deteriorates markedly under cultivation, especially under bare fallow, and the soils reach a condition where they set very hard when dry, and seal readily under the impact of rain-drops. This leads to excessive run-off and erosion in heavy rain storms, and also interferes with the germination of seeds. Good crop rotation and fertiliser practice is essential to maintain reasonable structure in these soils.

### Stoniness

A feature of most of the cereal areas of this State is the amount of stone, either as loose boulders or as outcrops of travertine limestone in mallee areas (Nos. 29a, 29b, 30, 31), or rocky reefs, usually quartzite, in the hilly Hard Red Duplex Soil (No. 36) region. Many thousands of tons of loose stone have been removed, but there are very few farms where cultivation can be carried out with implements not equipped with a 'stump jump' mechanism.

## CHEMICAL PROPERTIES

Almost all the soils in the better rainfall districts developed, ultimately, either from sedimentary rocks (Nos. 36, 37, 39, 40), some of which have deeply weathered lateritic mantles (Nos. 38, 44), or from calcareous continental (Nos. 29, 30, 31) and marine (Nos. 11, 24) sediments. Basic igneous rocks except for small areas in the Lower South East (Nos. 18, 34) do not occur. These unpromising parent materials have resulted in large areas of soils notoriously low in the essential plant nutrients. The most widespread deficiencies are phosphorus, nitrogen, manganese, copper, molybdenum, zinc and cobalt. Potassium, sulphur and calcium are also low and may become deficient on soils developed for some time, and especially where hay is cut. It is well known that different plants vary in their nutritional requirements and that crop rotation is important in maintaining soil fertility.

### Phosphorus

Total phosphate levels as low as 10 parts per million have been recorded in virgin soils. The other nutrient elements are similarly low in amount. Fertiliser

trials at Roseworthy Agricultural College during the period 1882-85 demonstrated the value of phosphorus on cereals and since that time the application of phosphorus as superphosphate has become an accepted farming practice throughout the State. During the 1950s some soils (No. 36) which had received frequent applications of superphosphate were shown in trials at the Waite Institute to have considerably enhanced contents of phosphorus. But other soils, notably the Hard Acidic Yellow Duplex Soils (No. 38) 'fix' phosphate probably on the iron and aluminium oxides they contain and thus render it unavailable to plants, so that striking results are obtained by using large applications of as much as 12 cwt of superphosphate per acre; but even so, follow-up dressings are necessary. Again on the Leached Sands (No. 7) and the Sandy Yellow Duplex Soils (Nos. 45, 46) soluble fertilisers are lost through leaching so that continued applications of superphosphate are necessary.

### Nitrogen

One cereal crop will use up all the available nitrogen in most of the virgin soils of the high rainfall areas. Nitrogen deficiency was recognised early in the history of the State, and it became part of established farming practice to use legumes to improve the nitrogen status of the soil. A good stand of subterranean clover or barrel medic, for example, will add as much as 200 lb of nitrogen per acre annually. Subterranean clover became the means whereby many difficult soils (No. 38b on Kangaroo Island, for example) were developed.

### Trace Elements

Knowledge of the so-called trace elements deficiencies—manganese, copper, molybdenum, zinc and cobalt—is comparatively recent, beginning with the work of Samuel and Piper who in 1928 demonstrated that 'grey speck' of oats was a manganese deficiency. In the ensuing 40 years, officers of the C.S.I.R.O., Waite Institute and Department of Agriculture have made substantial contributions to the trace element story. Their work showed that the addition of small amounts of the trace elements (for example, 1 oz of molybdenum oxide per acre, or 7 lb of copper sulphate per acre) added where required to the superphosphate meant all the difference between success and failure. One application was sufficient for several years in some instances (for example, copper on soils of unit No. 38), but in other cases (for example manganese on the Calcareous Sands unit No. 1 of Yorke Peninsula) repeated large applications are necessary.

All these results enabled the development of the previously too difficult, low fertility, soils of the high rainfall areas of the State, notably in the South East and on Kangaroo Island. Indeed since 1945 very large areas of the State have been transformed from almost valueless scrub land to good quality pasture by the use of superphosphate, trace elements and legumes, notably subterranean clover and lucerne.

### CLAY MINERALS

The clay minerals found in the South Australian soils examined up to the present time are mixtures of illite and kaolin. This result is comparable to that obtained on similar soils from other parts of Australia. Soils representative of the Shallow Red-brown Sandy Soils (No. 11), the Calcareous Earths (Nos. 29, 30, 31), the Crusty Red Duplex Soils (No. 35) and the Hard Red Duplex Soils (No. 36) have been studied. Usually the amount of illite is a little higher than the kaolin. The illite is usually degraded, that is, its potassium content is lower than the ideal value for illite, but nevertheless, is still high enough to ensure that potassium deficiency is unlikely to occur on these soils.

The Crusty Red Duplex Soils (No. 35) also usually contain some palygorskite, a clay mineral frequently found in soils of dry areas.

Buildings, roads and other structures are often disrupted when placed on certain soils, notably the Cracking Clays (Nos. 24, 25, 26, 27, 28) due to the alternate swelling and shrinking of the soil upon wetting and drying. This soil characteristic is due in part to the high content of clay, over 40-50 per cent, and in part to the nature of the clay minerals which are intergrades between illite and montmorillonite and have the ability to expand greatly on wetting, and to shrink again upon drying.

The study of soils for building purposes is a specialised topic and will be discussed in detail in a special article in a future issue of the *South Australian Year Book*.

### BIOLOGY

The soil contains a large population of small animals and also bacteria and fungi which affect the nutrient cycle in the soil. The study of soil bacteria and fungi has played a significant part in improving the productivity of South Australian soils. Many useful types were either sparingly present or absent from our virgin soils and therefore have had to be introduced. Not all micro-organisms are beneficial, however, so balancing the good and bad effects is part of the art of farming.

The biological population of South Australian soils is profoundly affected by the climate, especially the dry summers. An organism which survives as a permanent constituent of the soil fauna must be able to withstand complete dessication of the surface soil for periods of several months. This factor would account for the considerable differences in the numbers and types of, for example, earthworms, insects and so on compared with the more temperate regions such as south-eastern Victoria or New Zealand.

#### Soil Animals

Very large numbers of small animals, mainly insects, mites and earthworms, live in soils throughout the world, contributing by their feeding and burrowing to the decomposition of organic matter and the eventual return of nutrients to the plant-soil system. Much of Australia is arid or semi-arid, and the shortage of moisture limits the variety of soil animals. Ants and termites, because of their highly developed social organisations and ability to forage widely for food and water, dominate the soil fauna of all but the most arid and most humid portions of the continent.

Investigation of the effects on soil organic matter turnover of a common southern Australian mound-building termite, *Nasutitermes exitiosus*, is in progress. In an area near Adelaide there are three to four mounds of the species per acre. Mounds have a high organic matter content, consisting largely of the residual material from digestion of wood, gathered from the soil surface over a wide radius and carried through subterranean galleries to the mound. Mounds may be occupied by termite colonies for up to about 50 years; after the colony dies out the mounds are very resistant to further decomposition as they apparently include substances that inhibit microbial activity. The effect of mound-building, soil-inhabiting, termites on soil organic matter turnover is very different from that of earthworms, which dominate the soil fauna of humid temperate regions. There are many termite species in Australia, their relation to soil formation and fertility has not previously been investigated, and they may prove to be of great significance.



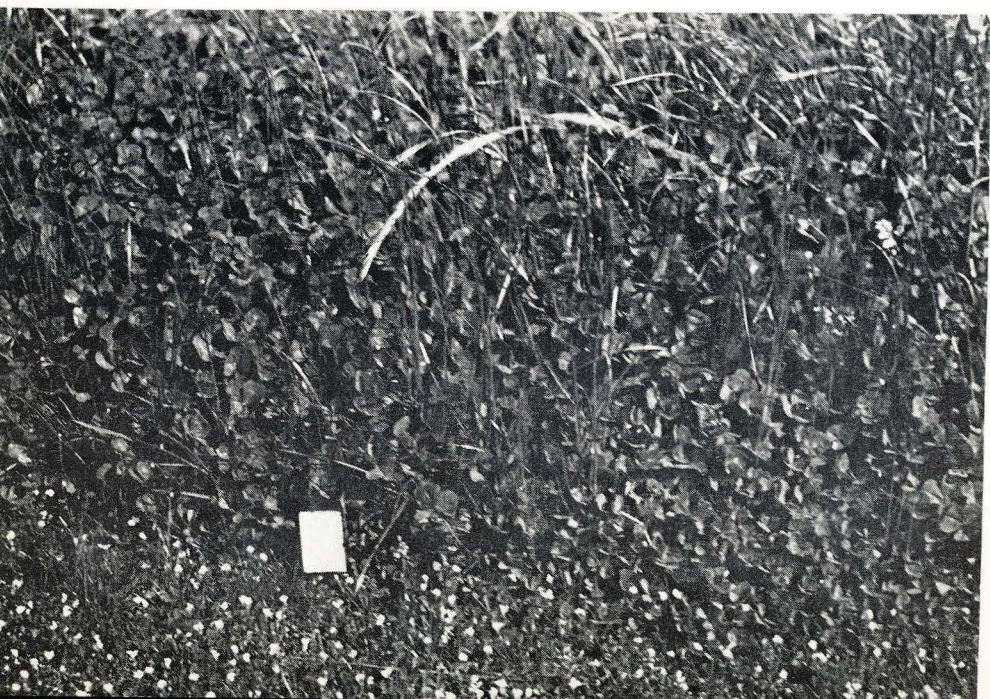


*Department of Agriculture*

Hard Alkaline Red Duplex Soil (No. 36) showing the hard-setting brown loamy surface, red-brown clay subsoil (dark band) and the limy clay (deep subsoil) beneath.

The difference in clover growth is due to superphosphate. The pasture in the foreground was missed during top-dressing.

*Department of Agriculture*







Calcareous Earth (No. 29).  
The soil is calcareous  
throughout but there is a  
concentration of limestone  
rubble in the subsoil.

*Department of Agriculture*

Stones are common on shallow soils in South Australia but modern stone-picking machinery has simplified the task of their removal.

*Department of Agriculture*



### Root Nodule Bacteria

The tremendous success of subterranean and other clovers on the Ninety Mile Desert and Kangaroo Island was achieved only after inoculating seed with root nodule bacteria, responsible for fixing atmospheric nitrogen. Often it was also necessary to apply superphosphate and trace elements which are needed both by the bacteria and the legumes. Lucerne and medics require different species of root nodule organisms and need to be specifically inoculated since these bacteria do not persist in all soils. Other legumes such as peas, tick beans and green beans respond to inoculation only rarely, since their bacteria are fairly wide spread.

Root nodule bacteria contribute more to the nitrogen content of South Australian soils than free-living bacteria, like *Azotobacter*, which are rarely abundant.

### Mycorrhiza

Some of the early failures when pine trees were first introduced into South Australia were due to the absence of the most efficient strains of mycorrhizas, toadstool fungi, which grow on the roots of trees and greatly increase the absorption of nutrients from infertile soils. When these fungi were introduced into pine nurseries in the Adelaide Hills the seedlings became infected and they persisted when transplanted into plantations at Kuitpo and Mount Bold. More recent research has shown that even better strains of fungi can be used with advantage on pines.

### Water Repellent Sands

Extensive areas of some sandy soils in the South East, Yorke Peninsula and Eyre Peninsula are not readily wetted by rain due to fungi which waterproof the sand grains causing the water to form globules and run off. In affected paddocks patches of sand remain dry for long periods even during wet winters. The problem which can be recognised in the virgin soils, often decreases in severity in young pastures, but increases to more serious proportions as the pasture ages. No economic remedy exists at present.

### Pathogenic Soil Organisms

In the ecology of soil organisms, the pathogens are of special concern to the farmer. A succession of suitable host plants can lead to a build up of these species, and the effect is often rendered more disastrous if lack of fertility prevents rapid early growth of the young crop. Nearly every crop plant is susceptible to some root infecting pathogen, but in this State the most significant are probably those infecting cereal crops. Eelworm (*Heterodera* spp.) attacks all the common cereals, being most serious on oats. Its host plants also include common grasses such as barley grass, which often contributes to a build-up of population. Eelworm can cause yield losses of over 50 per cent in badly infested crops. Root rotting fungi, such as *Ophiobolus* (Takeall), *rhizoctonia*, etc., also cause serious losses. There is no simple, direct control of these species, but their incidence is reduced by crop rotation and high soil fertility.

## SOIL EROSION

Wherever man has imposed cultivation and new forms of grazing on land, erosion has followed. In South Australia the most serious damage has occurred in the pastoral areas and in the cereal belt where both wind and water action on bare soil have resulted in the destruction of the surface.

### **Pastoral Areas**

The problem in the pastoral areas results from the introduction of a new population of grazing animals, sheep, cattle, goats and rabbits on to vegetation which had arrived at a delicate equilibrium with the indigenous, nomadic, marsupial populations. And this, moreover, has taken place in a climate of low and unreliable rainfall, less than 10 inches per year on the average and with a variation from the average of between 30 and 50 per cent. In the early days of settlement, over-optimistic stocking rates in good seasons resulted in the death of the native perennial shrub vegetation over large areas with consequent exposure of bare ground in drought seasons. These bare areas formed the foci for both wind and water erosion. Pastoralists are now more conservative with their stocking rates and a genuine attempt has been made by many to conserve the natural vegetation and thus minimise the erosion hazard. It is very doubtful however whether a new animal-vegetation equilibrium has been established.

### **Cereal Belt**

The system of dry farming developed to overcome the limited rainfall in the cereal belt resulted in the exploitation of the soil resources. Bare fallowing exposed the soil to sun, wind and water resulting in loss of surface soil structure and coherence due to the oxidation of organic matter. Widespread sheet and gully erosion developed throughout the undulating country in the Lower and Upper North and on parts of Eyre Peninsula. Most soils were affected, but by far the most seriously damaged were the Hard Red Duplex Soils (No. 36). Although active erosion is being arrested by improved management using soil conservation techniques, such as contour banks, thousands of acres have suffered more or less permanent damage. There is still need to increase the rate of treatment of areas subject to erosion.

The sandy soils of the mallee lands (Nos. 29, 30, 31) are highly vulnerable to sand drift when exposed by cultivation or grazing. The problem became very serious in the period from about 1930. Improved management techniques assisted by consolidation and enlargement of holdings has done much to control the problem.

### **Higher Rainfall Areas**

In the higher rainfall areas where improved pastures are the main form of land use, erosion has been much less extensive. However, rilling by water has often occurred during the establishment and renovation of pastures. Some deep gullies also occur, for example, in the clay soils of the Inman Valley area (No. 26b).

Many orchards and vineyards have suffered serious erosion damage in the past, but modified tillage methods and the planting of vineyards on the contour have greatly reduced the problem.

Serious wind erosion is largely confined to the Coastal Dunes (No. 1) extending intermittently from Encounter Bay to the Victorian border. The area involved is estimated at 50,000 acres. The rates of advance of the dunes is very slow and only in a few places is any valuable land threatened. The cost of stabilisation of the dunes is generally much greater than the potential value of the salvaged drift areas.

In the Upper South East large areas of Deep Sands (No. 6) have been developed for pasture in the last twenty years. These areas would undoubtedly drift if allowed to become bare through overgrazing, but so far most land holders have been able to keep a sufficient cover on them.

## LAND USE

Climate, particularly rainfall and temperature, is the main determinant of land use in South Australia. Broadly, on this basis, apart from irrigation, the State may be divided into three main zones; the semi-arid pastoral areas, with average rainfall less than about 10-12 inches per year; the cereal and sheep districts, with average rainfall in the range 10-20 inches per year; and the higher rainfall areas of sown pastures, intensive horticultural crops and forestry receiving more than 17 inches of average annual rainfall. Within these broad zones, soils and topography largely determine land use and productivity. In the semi-arid pastoral areas these two factors affect the nature and quantity of natural herbage and the susceptibility to erosion.

**Cereal and Sheep Districts**

In the soils used successfully for cereal production, the properties of the soil have had profound effects on productivity, and on management systems. For example, on the extensive areas of loam and clay-loam soils with high calcium carbonate content (Nos. 20, 29, 30, 31), various annual *Medicago* species grow very vigorously, and a system of ley farming with alternate years of crops and pasture has developed. With adequate phosphate fertilisers, this system has increased soil fertility and productivity dramatically, almost doubling the yield of wheat and barley in the last 30 years. On the other hand, productivity has not increased to nearly the same extent on the Hard Red Duplex Soils (No. 36), originally among the most productive of the cereal growing soils. On these soils self regenerating legume pastures are not readily established, and the deteriorating structure of their surface soil had lead to widespread sheet erosion. Because of the greater difficulty in establishing and maintaining legume pastures, the management system must be different and the desirability of using fertiliser nitrogen rather than complete dependence on legumes must be considered. Gypsum could be considered also to improve the condition of the surface soil, and thus possibly assist legume regeneration.

Efficiency of water storage by summer fallowing is dependent on the soil. The increased water made available to the crop by this practice may be over 4 inches in the Cracking Clays (No. 26) and less than one inch on soils such as the sandier varieties of the Calcareous Earths (Nos. 29, 30, 31). This obviously is an important factor in determining management and crop rotation, and has also an important bearing on erosion control.

**Higher Rainfall Areas**

There is a great range of soils in the higher rainfall country from Peats (No. 48) to Shallow Sandy Soils (No. 11), to Deep Calcareous Sands (No. 1) and Leached Sands (Nos. 6, 7) and to a variety of Duplex Soils (Nos. 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47). All of them create their own particular management problems.

Non-irrigated fruit and vine growing has generally been concentrated in, and flanking, the Mount Lofty Ranges. Selecting the better drained soils, notably Hard Red Duplex Soils (Nos. 36, 37) and associated Hard Yellow Duplex Soils (Nos. 38, 39), these orchards and vineyards have been moderately successful; but included areas of Deep Leached Sands (No. 6) and Sandy Yellow Duplex Soils (No. 46k) have caused management, fertility and erosion difficulties. A recent development has been the expansion of vine growing in the South East (near Naracoorte) on areas of well drained Hard Red Duplex Soils and other associated red and brown soils containing calcium carbonate occurring within the general area of Sandy Yellow Duplex Soils (No. 46).



Forest plantations of exotic species, almost entirely *Pinus* spp., have been made extensively in the lower South East and to a lesser extent in the Mount Lofty Ranges. Many of the soils used were very low in plant nutrients (Nos. 7, 38, 46). The correction of their nutrient deficiencies, in particular zinc, phosphorus and nitrogen, and the role of mycorrhizas in increasing the uptake of nutrients by the trees has allowed the expansion of a vigorous forestry industry.

The principal use of the higher rainfall areas is for improved pasture for dairying, sheep and beef production. The quality and productivity of the pastures and hence the intensity of production depends on the soils. The main pastures are based on subterranean clover in combination with grasses, such as perennial rye grass and *phalaris tuberosa*. These are grown largely on Hard and Sandy Yellow Duplex Soils (Nos. 38, 39, 40, 41, 42, 43, 45, 46, 47) with acid to neutral surface soils of sand to loam, rarely clay loam, texture, and with clay subsoils at less than 24 inches in depth. On Deep Leached Sands (Nos. 6, 7) and some Sandy Yellow Duplex Soils (No. 46) with deep surface sand horizons, the dominant pasture legume is lucerne and the associated grasses are either annual species such as brome grasses or autumn sown oats. The Shallow Dark Cracking Clays (No. 24) of the South East are waterlogged in winter but produce lush spring and summer pastures based on strawberry clover.

### Irrigation

Irrigation is practised on approximately 100,000 acres along the River Murray; in the South East, from underground supplies, on a rapidly growing area probably now exceeding 40,000 acres; and on small but very valuable areas on the Adelaide Plains and in the Mount Lofty Ranges.

### River Murray

Along the River Murray, citrus, stone fruits and vines are grown mainly on the elevated areas of Calcareous Earths (No. 29) with sand, loamy sand and sandy loam surface textures and with limited areas of more clayey soils used for vines. In general the deeper and more permeable soils are used for citrus and stone fruits. There is a good correlation between soil type and its use and management. Drainage and control of water table development, with its attendant salinity, is critical in management, and in this regard geological strata below the soil may be important.

Pastures, mainly for dairying, are grown along the River Murray on reclaimed Swamp Soils (No. 22) which are on alluvial deposits slightly below normal river level. The swamps successfully developed are those along the lower river, with excellent structure and free drainage. Further upstream many river terraces have been irrigated from time to time, but the intractable sticky nature of the Clay Soils (No. 26d) have generally led to abandonment of the projects.

### The South East

Irrigation in the South East depends on suitable underground water and soils. The cheapest flood irrigation requires large water supplies (over 40,000 gallons per hour), flat topography, and soils with only a moderate infiltration rate. Successfully flood irrigated soils include Shallow Red Clays, Hard Red and Brown Duplex Soils, and Sandy Yellow Duplex Soils. The Shallow Dark Cracking Clays (No. 24) generally have too high infiltration rates for flood irrigation and must be watered at higher cost by spray.

There is great scope for increased areas of irrigation in this region.



### *The Adelaide Plains and Mount Lofty Ranges*

A valuable vegetable industry near Adelaide is dependent mainly on underground waters, and to a less extent on streams and farm dams.

North of Adelaide, in the Virginia-Two Wells region, market gardeners have carefully selected the areas of sands and sandy loams of reasonable depth (Calcareous Earths No. 30) and the most friable alluvial soils along the streams. Some lucerne is grown on Hard Red Duplex Soils (No. 36) in this region.

In the Mount Lofty Ranges, vegetables are grown in valleys on alluvial soils and on gently sloping areas of Yellow Duplex Soils, where underground or stored water is available.

### THE FUTURE

In spite of the inherently poor soils found over much of the State, it has been possible by scientific research and a high standard of farming practice to maintain a steady increase in productivity from all areas except those with low rainfalls.

It is possible, with present knowledge, to increase production of all the major enterprises, provided there is an economic demand for the produce; thus the estimated 84,000,000 bushel wheat crop of 1968-69, over 50 per cent above the previous highest, could be the State's normal crop in the near future.

Few of the high rainfall pasture districts are being grazed at the high levels which are technically feasible, however, this does not mean that the highest levels are necessarily economically desirable at this time.

There are many problems yet to be solved, but the volume of soils and agronomic research is increasing each year. It would be a rash prophet who would predict an upper limit to the productivity of South Australian soils.

## 1.4 FLORA AND FAUNA

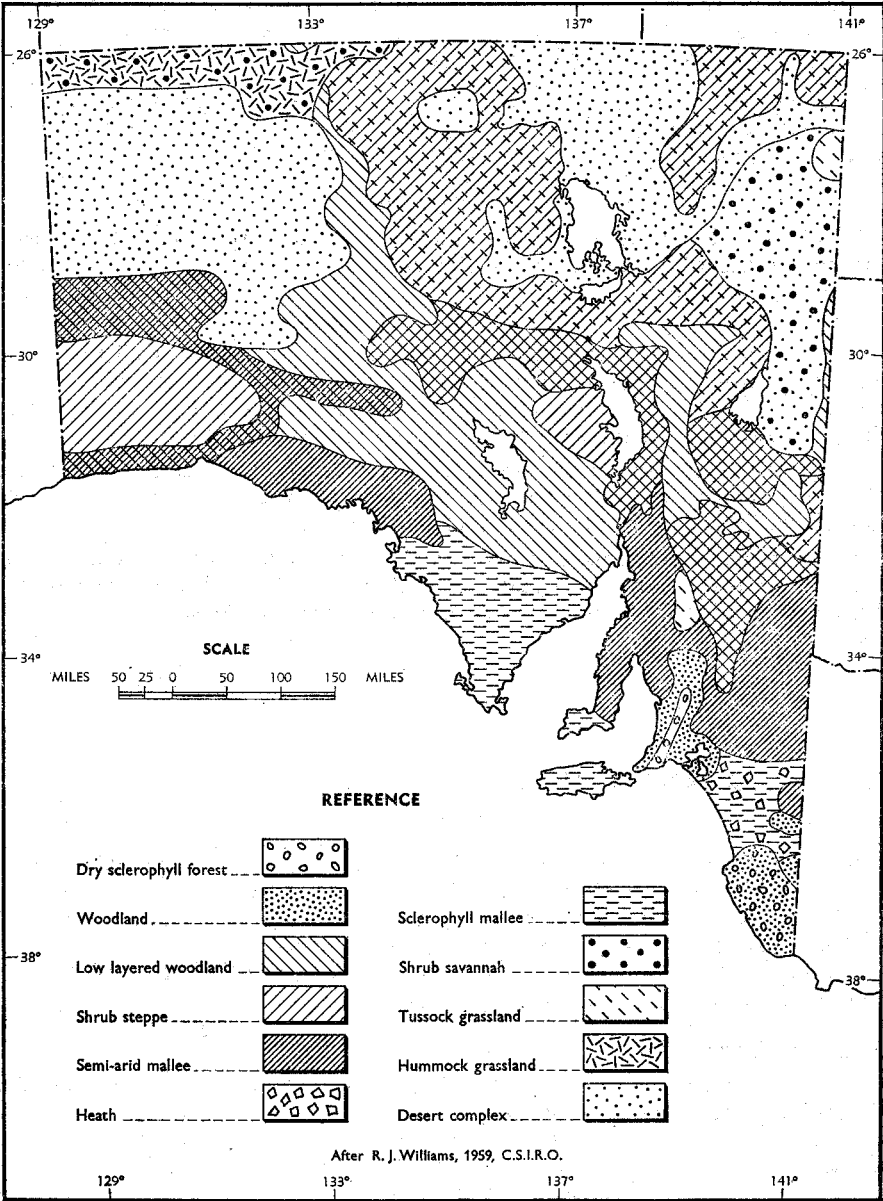
### FLORA

A broad division of vegetation types is formed by Goyder's Line which represents approximately the 10-inch annual isohyet. To the north of the Line, in the Eremaean Province, lies about 80 per cent of the State, experiencing arid to desert conditions where short, erratic growing seasons prevail. Areas to the south, in the temperate region, have climates geared to an equable seasonal cycle of winter rainfall and summer drought.

#### **Eremaean Areas**

These vast areas of inland South Australia are not well known botanically. Vegetation there ranges structurally from low layered woodland, through shrub savannah, to exceedingly sparse vegetation of very low stature (shrub steppe). As in arid situations elsewhere about the world, therophytes are well represented and after rain these may transform the scene with prolific but transient herbage. The woody perennial vegetation is of genera adapted to the dry conditions. Predominant trees and shrubs are frequently species of *Acacia* (mulga, myall, ironwood) *Cassia*, *Grevillea* etc. but other genera (*Hakea*, *Myoporum*, *Casuarina*, and less frequently *Eucalyptus*) are often involved. Some species such as the desert oak achieve a stature comparable

SOUTH AUSTRALIA  
VEGETATION MAP



MAP 6

with large temperate zone trees. Chenopod shrubs (Blue Bush, Salt Bush) are often prominent in the shrub stratum, and *Triodia* (Porcupine Grass) in the herbaceous cover, but there is considerable diversity in the Eremaean flora. The development of cattle and sheep grazing industries and the overstocking for long periods and especially in drought periods has led to the depletion of and alteration to much of the vegetation of this area.

### Temperate Areas

In general, vegetation characteristics of the temperate zone of South Australia succeed each other in a fairly predictable sequence from the highest to the lowest rainfalls. Under the high and intermediate rainfalls (about 30-40 inches) dry sclerophyll forest is well developed, particularly in the Mount Lofty Ranges, where it constitutes a western outlier of the dry sclerophyll forest system occurring in eastern Australia. *Eucalyptus obliqua* and *Eucalyptus baxteri* predominate, but other species such as *Eucalyptus rubida* (the candlebark) are sometimes prominent. Such forest is replete with lesser trees *Acacia melanoxylon* (blackwood) at a lower canopy level and a rich array of sclerophyllous shrubs and sub-shrubs beneath. Most species have generic analogues in equivalent dry sclerophyll forests of both eastern and western Australia. Sclerophyll forest in South Australia has been cut over extensively and is invaded by aliens. Lower rainfall areas down to about 15 inches per annum supported mainly savannah woodlands and layered woodlands with South Australian bluegum (*Eucalyptus leucoxylon*) and peppermint gum (*Eucalyptus odorata*) as predominant trees. Associated trees included river redgum (*Eucalyptus camaldulensis*) especially along river and creek frontages, sheoak (*casuarina* spp.), and manna gum (*Eucalyptus viminalis*). In these vegetations the grass stratum is expressed and the shrub stratum rather suppressed. These vegetations are now almost entirely replaced by agricultural areas.

In some places on the lower rainfall extreme of the temperate zone, variant vegetations occurred. These included substantial conifer (*callitris* spp.) and conifer-eucalypt forests and woodlands (particularly in the Flinders Ranges), and areas of pure savannah, as once occurred about Burra.

The simple division of the State into Eremaean and temperate areas needs qualifying on two counts:

(i) *Heath*. Certain higher rainfall temperate areas do not support the expected vegetation as a consequence of limiting soil fertility. The Coonalpyn Downs area is an example. Here low nutrient dune fields are superimposed on the landscape and support only a heath vegetation where the rainfall regime is suitable for woodland. Such 'light land' is the scene of contemporary agricultural expansion.

(ii) *Mallee*. Intercalated between the Eremaean and temperate systems proper, there is developed in South Australia extensive mallee vegetation, dominated by eucalypts, the various stems of which all rise from underground lignotubers. The term 'mallee' refers both to eucalypt species exhibiting this growth habit, and to vegetation dominated by such species. Mallee vegetation is associated in its temperate reaches with heath, and in its Eremaean extensions with various vegetation types.

A more detailed description of the vegetation was included on pages 26-37 of *South Australian Year Book* 1967 and should be referred to for a description of the plant species included in the vegetation formations shown in the map on page 32 of this issue.

## FAUNA

South Australia is poorly endowed with mammals and birds, this being largely attributable to the dry conditions which prevail over much of the State. Highly developed agriculture in the limited favourable areas and widespread pastoral occupation beyond have seriously depleted the larger fauna by diminishing the native habitats. Introduced predators are established throughout all occupied territory and range beyond it.

Determined efforts are being made, however, to establish a series of national parks and reserves which will preserve samples of the various habitat types and, it is hoped, their indigenous fauna. The Commissioners for National Parks control over 500,000 acres (see Part 6.4), while the Flora and Fauna Board administers the Flinders Chase Reserve on Kangaroo Island which is free from the introduced fox.

The relatively well-watered south-eastern region originally supported a variety of mammals, especially the larger marsupials, but these are reduced to remnant populations by extensive land development and by heavy shooting pressure. The brush-tailed possum (*Trichosurus vulpecula*) is still common, as is the grey kangaroo (*Macropus major*). In the dry interior the red kangaroo (*Macropus rufus*) at times greatly increases in numbers, probably due to changes caused by grazing and extra water supply. Emus and wombats are still to be found in numerous localities.

Bird life is more abundant and many species can be observed close to Adelaide, in the Mount Lofty Ranges, and on Kangaroo Island. Mallee areas with their lower rainfall are moderately rich in bird life although the removal of native flora has led to the disappearance of many species in certain districts. Many mallee birds may be found in areas of greater aridity and these areas also have their true desert forms.

South Australia is rich in reptiles, and numerous interesting species can be observed in the arid regions. As there are few permanent streams or swamps in the State some insects and other invertebrates common elsewhere are scarce or lacking. On the other hand many interesting desert-adapted forms are to be observed.

Apart from the fishes, which include edible species of considerable economic importance, the marine fauna has been little explored.

## PART 2

# EXPLORATION AND COLONISATION

There are many paradoxes in the story of the discovery and exploration of South Australia, these mainly being explained in terms of the nature of the State. In 1833 Charles Sturt was able to write that 'a spot has been found on the South Coast of New Holland to which the colonist might venture with every prospect of success. All who have ever landed on the eastern shores of Gulf St Vincent agree as to the richness of its soil and the abundance of its pasture.' However, in 1792 the French admiral D'Entrecasteaux was so far from being in agreement with this as to describe the coast of South Australia as 'so uniform that the most fruitful imagination could find nothing to say of it'. It is against a background of such contradictions that the picture of South Australian exploration unfolds: the Dutch reached South Australian waters in 1627, but it was not till after 1801 that British explorers discovered the valuable central southern coastline; Sydney was settled in 1788, but it was not until after 1836 that British settlers came to grips with the South Australian environment. The geographical characteristics of the country had a lot to do with this slow development and were also to hinder subsequent exploration.

## EXPLORATION BEFORE COLONISATION

The Dutch made the first recorded discovery of Australia in 1606 on the Gulf of Carpentaria, and Dutch ships were sighting Western Australia from 1616 onwards. It was in 1627 that the first part of the South Australian coast was discovered when the *Gulden Zeepaard* under the command of Francois Thyssen examined the coastline from Cape Leeuwin to the islands of St Francis and St Peter in the far west of South Australia. On board the *Gulden Zeepaard* was Pieter Nuyts, 'Councillor Extraordinary of India', after whom this area was named 'A Landt Van P. Nuyts'.

The Dutch, however, were a trading nation and the South Australian coast impressed them very little, for it presented no evidence of the existence of

trading wealth at all. Indeed, so little interest was displayed in this section of the Australian coastline that it was 165 years before the next recorded sighting of South Australia was made, and this was by a French explorer.

Rear-Admiral D'Entrecasteaux, who had been searching all around Australia for the lost French explorer La Perouse, sighted land south of Cape Leeuwin in December 1792 and examined the cliffs of the Australian Bight. He sailed to the head of the Bight, but then after so many miles of barren coast abandoned hope of finding anything other than desolate country, and sailed south for Van Diemen's Land. The early impressions of the South Australian coast were therefore most unfavourable and tended to discourage further investigation.

The British who followed were far more interested in the possibility of colonisation to help ease their population problem at home, and consequently, once the effects of early discouragement had worn off, they began to take an interest in South Australia as a possible site for a new colony. Lieutenant James Grant was the first British explorer to sail along the South Australian coast, sighting the extreme easterly shores of South Australia in about 1801. While in Cape Town he had been informed of the discovery of Bass Strait and was instructed to sail through it in the *Lady Nelson* on his way to Port Jackson. Sailing along the extreme south-east coast he named Cape Banks, Cape Northumberland, Mount Schank and Mount Gambier.

The first notable British contribution to the exploration of the South Australian coast came, however, with the voyages of Matthew Flinders in the *Investigator*. With the support of the President of the Royal Society, Sir Joseph Banks, Flinders sailed from England in July 1801. On his voyage of circumnavigation of the Australian continent he thoroughly explored the coast of South Australia, between January and April 1802. In addition he discovered the Gulfs and Central Highlands, thus solving the question of whether a north-south strait divided the Australian continent in two. More important was the fact that Flinders reported very promising country for settlement. Many places along the coast carry the names given by Flinders; several of these were named after places in his home county of Lincolnshire, e.g. Port Lincoln, Sleaford, the Althorpes and Boston Bay, while others include unusual but attractive names such as Backstairs Passage, The Pages, and Antechamber Bay. Flinders was in fact the first man to explore South Australian waters between Nuyts Archipelago and Encounter Bay. It was at Encounter Bay on 8 April 1802 that he met Captain Nicolas Baudin, the French explorer, heading along the coast from the east in *Le Geographe*.

Baudin, in command of *Le Geographe* and accompanied by *Le Naturaliste*, left Le Havre in October 1800 with instructions to explore several specified regions, including the then unknown portion of the southern coastline of Australia. After being delayed in the East Indies and Van Diemen's Land, Baudin sailed westward and charted the mainland coast from Western Port to Encounter Bay, where he met Flinders. The object of Baudin's expedition was to make scientific discoveries on behalf of Napoleon, but he had wasted considerable time *en route*. Thus most of the South Australian mainland coast was discovered before him by Grant and Flinders, and he was the original explorer of only a small section between Cape Banks and Encounter Bay. Some French names still remain, for example Lacepede Bay, Guichen Bay and Rivoli Bay. After the meeting at Encounter Bay, Baudin sailed further westward and along the northern shore of Kangaroo Island to Murat Bay, before being forced to abandon further exploration and to return to Port Jackson in June 1802. However, after re-equipping his expedition and with the addition of another ship (*Casuarina*), for charting work in shallow



waters, Baudin returned to the South Australian coast by way of King Island in Bass Strait. Leaving King Island on 27 December Baudin in *Le Geographe* and Freycinet in command of *Casuarina* headed direct for Kangaroo Island where they circumnavigated the whole island and charted its coast, being the first to chart its southern and western shores. This was to be the last major contribution made by an official French expedition to exploration of the South Australian coast.

Although these discoveries on the South Australian coast did not lead to any immediate colonisation, there began an increasing series of visits by sealing vessels to Kangaroo Island. A group of American sealers built a schooner on the island in 1804, while wild gangs of sealers and runaway convicts were forming settlements from 1806 onwards. In addition, French exploration in the area had led to a fear on the part of the British authorities that it might result in French colonisation, and, although not greatly valuing the area for itself, the British would have found it an embarrassment to have the French settled on the Australian continent. As a result, in 1804 the British sent Grimes, a government surveyor, to Kangaroo Island to report on it as a possible site for colonisation. The Grimes Report was most unfavourable, stating that the soil was poor and that the island lacked fresh water. On the other hand, in 1819 a Captain Sutherland visited the island and wrote an over-optimistic report on its future. It was this report which later led the South Australian Company into establishing their first station there in 1836.

In the period between 1804 and 1836 a number of further discoveries took place at various parts of the South Australian coastline by Captains Dillon (1815-16); Goold (1827-28); Hart (1831-33); and Jones (1833-34), together with the discovery of Lake Alexandrina by a group of sealers in 1828. Reports of this period were marked by contradictions regarding the suitability of South Australia for settlement. However, contradictory as were these accounts reaching England, they managed to convince the founders of South Australia even before 1830 that there was 'a sufficient, indeed a superabundance, of fertile soil for the purpose of the colony'.

The most significant explorations of the period immediately prior to colonisation were those of Captain Charles Sturt, who explored the Murray River from New South Wales down to its mouth; traversed Lake Alexandrina and located the Goolwa channel, reaching the western shore of the Murray mouth on 12 February 1830. Captain Sturt's journey has become something of an epic in Australian history; with a small party of soldiers and convicts he rowed 1,700 miles on the Rivers Murrumbidgee, Darling and Murray. They suffered from desperate weariness, endured a distressing lack of provisions, and were periodically attacked by bands of Aborigines. However, the main object of Sturt's journey was accomplished; the settling of the long-insoluble 'problem of the rivers' of south-eastern Australia. But the real significance to South Australia was more than the mere settling of what was little more than an academic question, for his discoveries opened up 2,000 miles of navigable inland waterway and gave to Gulf St Vincent, which lay so near the mouth of the Murray, an importance and significance previously undreamt of. It was the age of canal building in Europe and of the development of the Mississippi in America, so that navigable water was considered of prime importance. The exuberance felt by everyone interested in South Australia at such a discovery is typified by the Wakefield theorists: 'The whole produce of eastern Australia will eventually be shipped from this place'. In fact the Murray became 'the grand attraction of the scheme'. However, Sturt's own fervour at this stage was somewhat cooler than that of interested persons in England for there was one great disappointment which

marred his discovery—the Murray lacked a sufficiently safe navigable mouth. Sturt found that the Murray flowed into a series of shallow lakes and a sand-blocked mouth. So little did Sturt's contemporaries understand the earth movements and land formations of the area, that their only conclusion was that there must somewhere be another channel emptying the waters of the Murray into the sea. So, the 'problem of the rivers' was replaced by the 'mystery of the Murray mouth'—and official action was to be taken promptly to solve this mystery.

Governor Darling of New South Wales sent Captain Collet Barker to the southern coast to try to solve the problem of the Murray. Barker, landing at Noarlunga on 17 April 1831 ascended Mount Lofty and then returned to his ship, the *Isabella*, and examined Port Adelaide. After landing again at Rapid Bay, he crossed the hills to the Murray, thus proving that the river had no westerly outlet. Barker's expedition came to a tragic end when, under mysterious circumstances, he was apparently murdered at the Murray mouth by the usually peaceable Narrinyeri natives. This was the first of a long series of tragic deaths, mainly arising out of navigational difficulties, in the area of the Murray mouth which tended to cast a hoodoo on its navigation later on. Barker's party, however, reported fertile country in the region and the existence of a pass from the Murray mouth to Rapid Bay on Gulf St Vincent. While Barker's expedition proved without doubt that there was no really navigable connection between the Murray and the sea, it added to the rapidly growing volume of favourable accounts of the fertility of the region around Gulf St Vincent. Interested people in England were so obsessed with the geographical fact of the great Murray waterway opening up the centre of Australia that they barely registered the unfavourable accounts of its egress to the sea.

Probably the greatest encouragement for the settlement of South Australia came from Charles Sturt himself, who after his return to Sydney in May 1830 wrote *Two Expeditions into the Interior of Southern Australia* (published in 1833), in which he said: 'My eye never fell on a country of more promising aspect, or more favourable position, than that which occupies the country between the lake and the ranges of St. Vincent's Gulf, and continuing northward from Mount Barker, stretches away without visible boundary'. This glowing report, together with that of Barker's expedition, was welcomed by those in England seeking a suitable site to establish a colony where the principles of the 'Wakefield Plan' could be applied without restriction. Sturt spared no efforts in converting opinion to the potentialities of South Australia and, as well as his *Two Expeditions*, he wrote a private letter to the Colonial Office on 17 February 1834. Sturt actually marked the present position of the Outer Harbor at Port Adelaide as the proper and natural site for the capital. 'It is in the angle formed by the creek with the coastline that I would recommend the formation of a township, . . . because it appears to me that when the distant interior shall be occupied and communication established with the lake and valley of the Murray, the banks of this creek will be the proper and natural site for the capital . . . The level country to the north would be overspread, the valley of the Murray would be peopled, every available spot would be located, and its numerous ramifications would afford pasture for thousands of cattle'. In his reasons for this opinion he showed more foresight than he was to do later when, in disagreement with Colonel Light, he supported those who wished to move the capital to Encounter Bay.

Colonel William Light, who had been appointed Surveyor-General of the new colony, sailed from England in the *Rapid* on 4 May 1836 with instructions to select a site for the capital of the colony. After a brief visit to Encounter Bay,



*Department of Agriculture*

The Shallow, Dark Cracking Clays (No. 24) are subject to severe seasonal waterlogging, unless drained. When top-dressed, with 2 bags of superphosphate per acre and the trace elements copper and zinc, highly productive strawberry clover pastures, as on the left background, may be established. It contrasts with the unfertilised land on the right.

Calcareous Sand (No. 1) on southern Yorke Peninsula.

*Department of Agriculture*







This profile of a Cracking and Self-mulching Clay (No. 26) shows the numerous cracks which appear in summer. The cracks extend to 3 feet or more in depth.

*Department of Agriculture*

More than 150,000 acres of farming land are protected by contour banks in the north of South Australia.

*Department of Agriculture*



during which he unhesitatingly rejected that area as being unsuitable, he landed at Nepean Bay on Kangaroo Island where some South Australian Company ships had already established a settlement. From here Light explored the east coast of Gulf St Vincent. Then, pressed for time by the unexpected arrival of the new settlers, he was able to make only a quick trip to Port Lincoln and a brief inspection of part of the west coast of Gulf St Vincent before, in concurrence with Sturt's earlier opinion, he decided that the most suitable site for Adelaide was on the banks of the small, but centrally situated, River Torrens.

### COLONISATION

The colonisation of South Australia was in itself an experiment involving certain entirely new principles and was to represent a turning point in British colonial policy.

The period was conducive to colonisation as in Britain there was widespread unemployment and poverty, the popular remedy for which was emigration. Nevertheless the somewhat revolutionary nature of the plans was to result in seven years of negotiation and considerable modification of early ideas before the colonisation of South Australia was finally approved.

The theoretician was Edward Gibbon Wakefield, and his ideas were contained in a number of writings including the now famous *A letter from Sydney* series, written in 1829 while he was imprisoned in Newgate Gaol. Wakefield's plans involved three broad principles: the sale of land; the use of the receipts for sponsoring emigrants; and the granting of some measure of self-government. Drawing on developments in New South Wales Wakefield argued that the then current system of giving away vast tracts of land to settlers resulted in an imbalance between land and labour. It was therefore desirable to restrict land distribution and increase the labour supply, and this could be done by selling land at a suitably high price to prevent all labourers becoming landowners and by **devoting the proceeds to free passage for a carefully selected labour force.**

At the same time, following conflicting observations by early explorers, encouraging reports of the South Australian coastline filtering in from traders and seamen gave rise to moves for the practical application of Wakefield's ideas for the founding of a colony in South Australia.

The first attempt to form a colony was made by Robert Gouger who, having met Wakefield in Newgate Gaol in 1829, was so impressed with his ideas as to approach certain interested parties with a view to purchasing a tract of land in South Australia. He was unable, however, to gain sufficient support to interest the Colonial Office in his plans.

In 1830 the National Colonization Society was formed with Gouger as its secretary. The Society served to further disseminate Wakefield's principles, but was not directly associated with plans for a colony in South Australia.

Renewed interest in colonisation followed the first of Captain Sturt's enthusiastic reports of the land of the lower Murray and in 1831 a group of intending settlers, still enthused with the ideas of Wakefield, formed the South Australian Land Company. A committee headed by Colonel Robert Torrens approached the British Government for a charter and then made preparation for the first voyage. The Government was not prepared to grant the necessary territory, and negotiation continued until 1833 when the Company finally conceded that the Government was unlikely to approve any plans involving a chartered colony.

From the same core of enthusiasts who had supported this and earlier ventures there emerged in 1834, the South Australian Association. This group

was prepared to abandon hopes for a chartered colony, conceding the issue of self-government, provided that the enabling legislation accommodated Wakefield's other principles for land sales and migration. The passage of the legislation was by no means smooth; the scheme was new and involved untried principles, and knowledge of the territory was still extremely limited. In addition the association of many persons of liberal outlook with the plans probably reinforced official caution, and these people were to gain few if any concessions.

Doubts on the suitability of the site were to be largely dispelled by the writings and personal representations of Sturt and the confirmatory expedition by Barker, and finally in July 1834 legislation for a colony in South Australia was put before Parliament. This legislation represented a considerable compromise on earlier plans.

The South Australian Colonization Act (4 & 5 William IV. Cap. 95) was assented to on the 15 August 1834; the persistent efforts of Gouger, Torrens, and many others for a settlement in South Australia had finally borne fruit, and at least some of the ideas of Wakefield were to be tried. The territory allotted under the Act embraced 309,850 square miles, with the western boundary the 132nd meridian of east longitude and the other boundaries virtually as they are today. The colony was to be opened to settlement by British subjects, but under no condition were convicts to be admitted, making South Australia the only State to be settled entirely by free persons. Authority was to be divided, with the Colonial Office through the Governor controlling all affairs of government except land sales and immigration, these fields being reserved to a Board of Commissioners. Provision was made for self-government upon the population reaching 50,000. All land alienated by the Crown was to be sold at a price of not less than '12 shillings' (\$1.20) per acre and the whole of the proceeds used in 'conducting the emigration of poor persons from Great Britain and Ireland'.

Although Parliament was prepared to authorise the experiment it was not prepared to finance it; the colony was to be self-supporting. The Commissioners were accordingly authorised to borrow \$400,000 against future general revenue to finance the founding of the colony and the establishment of government, and \$100,000 against the sale of land to start the migration programme. Finally, the Act contained two conditional clauses which were to harass the whole venture and served to delay colonisation another twelve months. The first of these conditions, which were to be satisfied before the Commissioners could exercise their general powers, required that government securities to the value of \$40,000 be lodged as a guarantee for the venture. Secondly land to the value of \$70,000 was to be sold prior to settlement.

A Board of Commissioners with Torrens as chairman was appointed early in 1835. The Board immediately offered land in the new colony at \$2 per acre including rights to a city acre with every 80 acres of rural land. In spite of considerable publicity, unsurveyed land in an unknown colony proved difficult to sell, and with less than half the land sold the price was reduced to the permitted minimum of \$1.20 per acre. Finally, George Fife Angas, a member of the Board, together with two others took up the balance of the land on behalf of the South Australian Company, which was then in the process of being formed.

In December 1835 with sufficient land sold and with the \$40,000 guarantee lodged with the Treasury, the Commissioners were free to begin the business of colonisation. The South Australian Company was formed in January 1836, and in February two ships of the Company sailed for Kangaroo Island to establish a settlement.

May 1836 saw the first official departure of the Surveyor-General, Colonel William Light, whose tasks included choosing a site for the first settlement. Details of Light's early movements are given on pages 38-9. The first Company vessels reached Kangaroo Island in July, and colonists arrived at Adelaide from early November. The first Governor of the colony, Captain John Hindmarsh R.N., arrived at Holdfast Bay on 28 December 1836 and the new colony was officially proclaimed on the same day. By this time some 300 colonists were already in residence. Hindmarsh was to remain in the colony for eighteen months, a period marked by political feuding and very little progress.

The one outstanding feature of the first two years was the work of Light. Expected to carry out impossible tasks with an inadequate staff Light first had to contend with opposition to his choice of a site for Adelaide. Fortunately his views prevailed and the city was surveyed to the plan which has since won so much acclaim, and the land allotted by March 1837. The survey of country land for the preliminary purchasers proceeded very slowly and it was not until May 1838 that the first ballot for country sections was held. At the same time the survey staff were becoming increasingly disgruntled with the unrealistic demands of the Commissioners and in June almost the entire staff resigned. Thoroughly exhausted by his constant struggle with misguided officialdom Light died in October 1839.

While the preliminary survey was in progress the settlers remained in Adelaide where their energies and resources were largely devoted to speculation in town lands and in land orders, and where supplies had to be imported with a corresponding outflow of capital. Superimposed on this situation was the continual arrival of new immigrants who served only to increase the volume of the unemployed.

Much of the inactivity of the colony was due to constant clashes between Hindmarsh and the Resident Commissioner, J. H. Fisher, which finally led to the dismissal of Fisher and the recall of Hindmarsh in July 1838. It was realised that the divided authority as incorporated in the Colonisation Act was impracticable, and the next Governor, Colonel George Gawler, was authorised to represent both the Crown and the Commissioners.

Appalled at the stagnation of the colony, Gawler immediately undertook a liberal spending programme. Surveying was considerably increased with the result that half a million acres had been surveyed by mid-1841. At the same time an extensive public building and works programme provided relief for the unemployed. Generally Gawler created a renewed state of optimism which remained until 1840 when land values were depreciated and sales declined. Immigrants continued to arrive throughout this period.

Most of Gawler's expenditure was met by bills drawn on the Commissioners in London. In 1841 a situation was reached where the Commissioners could no longer honour these bills and Gawler was summarily replaced by Captain George Grey. The Imperial Parliament met the bulk of the debts, and in 1842 the Board of Commissioners was abolished. Thus the small measure of independence which the Board represented disappeared and South Australia became an ordinary Crown Colony.

The term of office of Grey was in contrast to that of Gawler, with Grey imposing rigid economies. Public expenditure was cut and considerable unemployment with its accompanying hardships followed. Speculation ceased and the unemployed gradually left Adelaide to be absorbed on the lands which Gawler had opened up. By this time the flow of immigrants had ceased with the suspension of the assisted migration scheme.



By 1844 the colony was producing wheat in excess of its needs and when Major Robe succeeded Grey as Lieutenant-Governor in 1845 South Australia finally became self-supporting. Moreover prosperity was on the doorstep; copper had been located at Kapunda in 1843 and a major find was made at Burra in 1845. Heavy immigration followed these discoveries and continued until the Victorian gold rush. Copper soon became the principal export, with wool providing a complementary cargo. In addition, the repeal of the Imperial Corn Laws in 1846 and the Navigation Acts in 1849 strengthened the export trade in grain.

The discovery of gold in Victoria in 1851 had a two-fold influence on the development of South Australia. In the first place it drained off a large proportion of the skilled artisans and forced the closing of the copper mines. Secondly it gave great impetus to agriculture when the price of wheat rose sharply—the feeding of the miners became as attractive a proposition as was the actual mining. A temporary shortage of money was relieved when considerable quantities of gold were attracted to the colony by enabling legislation and the provision of armed escorts. Four years later when the miners returned many of the more fortunate purchased land with their winnings.

At the same time political changes were taking place and in 1856 South Australia attained self government. Further details are given in Part 3—Constitution and Government.

### EXPLORATION AFTER COLONISATION

Only a minor portion of the area proclaimed as South Australia was to prove economically viable, but extensive exploration with its accompanying hardships was necessary to establish this fact. Post-colonisation exploration was of two forms; the first being the continuous process of discovery as settlers sought grazing and crop lands and sometimes mineral resources, and the second the more deliberate activities of the professional explorers as they sought to cover vast distances through unknown terrain.

The earliest exploratory moves of the colonists were directed towards establishing an overland route between Adelaide and Encounter Bay, and in discovering a north-easterly passage to the River Murray that would by-pass the Mount Lofty Ranges. Contact was first made with Encounter Bay in about July 1837 by Colonel Light and J. H. Fisher, and in December of the same year an expedition by Strangways and Hutchinson played a further important part in making contact with the River Murray by driving a bullock cart across the ranges to Encounter Bay, and then exploring the Murray mouth, the Goolwa channel and the southern part of Lake Alexandrina. The north-easterly route to the Murray was first traversed successfully early in 1838. Penetration of the Mount Lofty Ranges began in 1837, and by the end of the year parties had crossed the ranges and descended to Lake Alexandrina.

From the beginning of 1838, attempts were made to open up stock routes from the eastern States. Joseph Hawdon and Charles Bonney were the first to make an overland cattle drive to Adelaide. Leaving Hawdon's station near Albury on 13 January 1838 with a party of seven men, they took a route which followed the Murray for much of the way, and reached Adelaide in eleven weeks with the cattle in good condition and only four head out of 300 lost *en route*. At the same time, Edward John Eyre was making a similar cattle drive, but after unsuccessfully trying to find a suitable trail south of the Murray, he was forced to make his way back to the Loddon River and then follow the trail taken by Hawdon. In another journey starting in 1838, Eyre became the first to bring sheep overland to Adelaide, driving 1,000 sheep and 600 cattle along the Hawdon

trail. Charles Sturt was another to make an early stock drive to Adelaide, while Bonney in 1839 pioneered an alternative route which followed the south-east coast of the State and crossed the Murray above Lake Alexandrina.

Other parts of the State were also attracting attention. A section of Yorke Peninsula was visited in 1838, and in the following year a number of expeditions were made into the hinterland of Port Lincoln. Thus by 1840 the area within a fifty mile radius of Adelaide had been explored for pastoral, farming and mineral lands. Settlers had also ventured by boat along the Murray, by boat to Port Lincoln and thence inland, and by boat and overland to Yorke Peninsula. Reports by drovers who came down the Murray suggested that the land on the other side of the Murray was of little immediate value. It was soon to be realised, however, that very different conditions prevailed in the lower South East, and by the mid-1840s this area was supporting a considerable sheep population.

Knowledge of the arid interior and of the far west coast was to be obtained from a number of major expeditions, the first such venture being led by Edward John Eyre. In 1839 Eyre journeyed north to Mount Arden, at the head of Spencer Gulf, where he established a base camp. From Mount Arden he made the first sighting of the dry bed of Lake Torrens. Crossing to Port Lincoln, Eyre proceeded up the west coast of the peninsula which was to bear his name, passed through Streaky Bay, and came to within fifty miles of the Western Australian border. The return journey to Mount Arden camp was made across the top of Eyre Peninsula.

The interest of the colonists was now divided between the country to the northward, including Eyre's new-found lake, and the possibility of establishing an overland stock route to Western Australia. Eyre having just returned from the desolate country of the Great Australian Bight showed little enthusiasm for the latter idea, and in June 1840 set out for the north. From Mount Arden he made three attempts to penetrate beyond the lakes, but after following the Flinders Ranges to Mount Hopeless and making a number of observations, he concluded that Lake Torrens was a giant horseshoe-shaped salt lake forming an impassable barrier. This erroneous belief was to persist for eighteen years.

Thwarted in his efforts to go north Eyre decided to attempt the western crossing. Leaving Mount Arden the party separated, one group going direct to Streaky Bay while Eyre went down to Port Lincoln. The party reformed at Streaky Bay and moved to Fowlers Bay, where a camp was established in November 1840. After a number of preliminary explorations around the Bight, Eyre and a small party set out for King George Sound (Albany) in February 1841, having sent the remainder of the party back to Adelaide. Eyre arrived at King George Sound in July after an extremely tortuous crossing which, although an example of human endeavour, contributed little to geographic knowledge.

In 1842 and 1843 the Surveyor-General, Colonel Frome, made two trips to the Lake Torrens region in an attempt to determine the nature of the area. However, after reaching a 'desert-like' Lake Frome (which he believed to be part of Lake Torrens) he turned back, making two short thrusts to the east on the return journey. Frome had seen enough to be able to report that 'there is no country . . . as far as the meridian 141° (and probably much beyond it) available for either agricultural or pastoral purposes'.

Captain Charles Sturt, whose earlier journey down the Murray had helped precipitate the colonisation of South Australia was again to contribute to South Australian exploration. Considerable mystique had developed concerning Central

Australia, including the rumoured presence of an inland sea, and in August 1844 Sturt set out from Adelaide in an effort to unveil this area. Hoping to avoid the supposed horseshoe lake, Sturt followed the Murray and Darling Rivers to Menindee. After passing through Broken Hill and seeing Eyre's Mount Hopeless from the other side of the lakes, the party moved to Mount Poole some 200 miles north of Menindee. Here they rested for six months while waiting for rain to fall. In July 1845 Sturt set off in a north-westerly direction crossing Sturt's Stony Desert and the north-east corner of the State. Although temporary relief was provided by Eyre Creek, whose course they followed for some considerable distance, the desert nature of the subsequent terrain forced the party to turn back when very close to their central goal, and only 500 miles from the Gulf of Carpentaria. A second assault on the desert also failed, although Sturt explored along Cooper Creek for almost 100 miles before returning to the base camp and thence to Adelaide in January 1846.

In 1846 John Horrocks led a small party north from his station, Penwortham, through the Flinders Ranges via Horrocks Pass (so named by the party) and on to a camp site at Depot Creek. The party had brought with them the only camel then in the colony, the first time one had been used for exploration work in Australia. From Depot Creek Horrocks made two trips, the first of about twenty miles and the second about sixty miles to Lake Dutton where, jostled by his camel, he accidentally shot himself, thus bringing the expedition to an early end, but not before he had formed the opinion that there was no suitable pastoral land in that direction. Horrocks died of his wounds about three weeks later.

Further to the west a small expedition led by John Darke explored country to the north and east of the Gawler Ranges, and concluded that there was no useful land for settlers in this region. On his way home to Port Lincoln Darke was mortally wounded by natives near what is now known as Darke Peak. In 1857 Stephen Hack explored the country west of Lake Gairdner and found useful pastoral country at the south-western end of the Gawler Ranges.

At about this time the northern lakes again became a centre of interest. In 1856 there had been considerable rainfall in the area, and when the Deputy Surveyor-General, G. W. Goyder, visited Lake Torrens he found an inland sea surrounded by excellent vegetation. Goyder's glowing report was, however, discounted by a return journey the following year. Indeed the extremely fickle seasons experienced in the north were to lead to many conflicting reports as the explorers and settlers moved northwards. Between 1857 and 1859 several exploratory expeditions visited the region of Lake Torrens and it was during this period that the myth of the horseshoe lake was destroyed. Knowledge of the lakes district was extended by B. H. Babbage, who discovered Lake Eyre in 1858, and Major P. E. Warburton, who located the first stock crossing. A. C. Gregory, coming south from Queensland in search of Leichhardt, passed between the lakes *en route* to Adelaide in 1858.

At the same time parties were searching for pastoral country in the north, with the most extensive search being made by John McDouall Stuart in 1858. Stuart, who had been in Sturt's party in 1844, set out from Mount Arden, passed to the west of Lake Torrens, and circled north of Coober Pedy, returning to Mount Arden via Fowlers Bay. In the meantime the South Australian Government was offering a reward for the first successful north-south crossing of the continent, and after making two exploratory journeys to the north in 1859, Stuart set out in March 1860 to attempt such a crossing.

Stuart had an advantage over Sturt in that the intervening years had revealed the lakes to be passable and he was thus virtually able to begin his expedition at

Chambers Creek at the southern tip of Lake Eyre, and to pass through known country as far as The Neales watercourse. Stuart reached the MacDonnell Ranges in the Northern Territory in April, and later the same month estimated that he had reached the centre of the continent. His attempt to reach the northern coastline was thwarted however, and in June he turned back. In a second attempt in 1861 he followed the same route and this time reached Newcastle Waters before being forced to return. At his third attempt Stuart was successful, reaching the sea on 24 July 1862 and establishing a route which was to be followed by the Overland Telegraph ten years later.

While Stuart was making his second attempt to reach the north, the ill-fated Burke and Wills expedition was crossing the continent further to the east. Their journey took them across the north-east corner of the State along much the same path as that followed by Sturt some seventeen years earlier. In 1861 and 1862 parties led by Alfred Howitt, who left from Melbourne, and John McKinlay from Adelaide were to pass through the same area in search of Burke and Wills. After finding traces of the expedition on Cooper Creek, McKinlay pushed east and then north, to reach the Gulf of Carpentaria.

The construction of the Overland Telegraph between 1870-1872, and the subsequent maintenance of this link between Adelaide and Darwin, naturally led to minor exploration of the adjacent country. At this stage attention turned to the land between the telegraph line and the settlements of Western Australia. Foremost among the explorers of this region, and whose paths brought them within South Australia, were John Forrest and William Ernest Giles. In March 1870 Forrest left Perth for Adelaide, covering much the same path as Eyre had taken thirty years earlier. Forrest crossed South Australian territory again in 1874 when he travelled from Geraldton in Western Australia across the centre of the continent, coming down the Alberga watercourse to Peake telegraph station.

Giles had set out from the Overland Telegraph in 1873 at a point north of Oodnadatta, but was forced to return after covering approximately half the distance to the western seaboard. He tried again in May 1875, this time going south from Beltana to Port Augusta and then to Ooldea on a route which forty years later was to be closely followed by the east-west railway. From Ooldea the party went north for over 100 miles before again striking out to the west. Giles reached Perth in November, and three months later left Geraldton to return to South Australia on a route similar to that taken by Forrest two years earlier, arriving at Peake telegraph station in August 1876.

In 1873 W. C. Gosse, returning from an unsuccessful attempt to reach Perth from Alice Springs, discovered and named the Musgrave Ranges.

A number of persons other than those mentioned contributed to the exploration of the State, both in the period discussed and subsequently. The inhospitable nature of the country meant that many areas had to await the coming of the aeroplane before an accurate physical description could be recorded. One such expedition was that led by Donald Mackay in 1935 when the western half of the State north of the east-west railway line was aerially surveyed.

## **PART 3**

# **CONSTITUTION AND GOVERNMENT**

### **3.1 SYSTEM OF GOVERNMENT**

South Australia is one of the six Australian States (originally constituted by Acts of the Imperial Parliament) which at Federation in 1901 ceded many of their powers on matters of national importance (*e.g.* international affairs including defence) to the Commonwealth of Australia. From time to time other powers on matters of local importance have been delegated to local governing bodies. As a result the people of South Australia are subject to the laws of a three-tier system of government. In addition statutory powers within specified fields are exercised by certain semi-governmental authorities such as Municipal Tramways Trust, Electricity Trust of South Australia, South Australian Housing Trust, and Metropolitan and Export Abattoirs Board.

Both the Commonwealth and the South Australian Parliaments are bicameral: in each the leader of the Government (the Prime Minister of the Commonwealth and the Premier of South Australia) is seated in the Lower House; in each the Upper House has restricted powers concerning money Bills.

#### **Electorates**

For elections for the Commonwealth Upper House (Senate) each State is a single multi-member electorate. South Australia is divided into five multi-member electorates for elections for the State Upper House (Legislative Council) and into twelve and thirty-nine single-member electorates respectively for the Lower House of the Commonwealth (House of Representatives) and the State (House of Assembly).

Although in both the Commonwealth and South Australia it is Parliament alone which has the power to make changes in the number, size, and distribution

of electorates, it is customary to appoint electoral commissions to recommend in these matters.

The terms of the Commonwealth Constitution provide for changes in House of Representatives electorates in certain eventualities, but in the South Australian Parliament changes in electorates for either House can be effected only by amendment to the Constitution.

Because of a prescribed relationship between population and the distribution of House of Representatives electorates Commonwealth electoral commissions are usually appointed after each Census to consider the effect of changes in the distribution of population and, if necessary, to suggest alterations to the boundaries and distribution amongst the States of Lower House electorates. In South Australia the boundaries of electorates are defined in a schedule to the State Constitution; there is no prescribed relationship between population and electorates, and electoral commissions are appointed at irregular intervals.

The electoral commission appointed after the 1966 Census recommended that South Australia be given an additional seat in the House of Representatives. After the necessary legislation had been passed, new electoral boundaries were proclaimed on 21 November 1968—in future elections twelve members from South Australia will be returned to the House of Representatives.

The Electoral Districts (Redivision) Act, 1968-1969 assented to on 20 February provided for the appointment of a three-man Electoral Commission to divide the State into forty-seven House of Assembly districts, eight more than at present, and also to re-define Legislative Council districts without increasing the number. Having considered submissions from all interested persons and organisations, the Commission is expected to complete its report with recommendations late in 1969. A preliminary report dividing the State into metropolitan and country areas was released in May 1969.

### **Party System**

Most members of both the Commonwealth and the South Australian Parliaments are elected by the voters from candidates pre-selected and endorsed by one or other of the major parties. Once policy has been determined at a party meeting, members usually observe party solidarity; speaking, voting, and acting in accordance with that policy both in and out of Parliament whether the party be in government or in opposition.

### **Responsible Cabinet Government**

The system known as 'responsible Cabinet government' operates throughout Australia; the Sovereign (or the Governor-General of the Commonwealth or Governor of the State as the representative of the Sovereign) performs acts of government on the advice in Executive Council of Ministers who are accountable for those acts to Parliament and, through Parliament, to the electorate. An essential feature of the system is that the Government will resign or seek a new mandate from the electors if it ceases to command a majority on the floor of the Lower House.

### **Ministers, Cabinet, and Executive**

When a Ministry is to be formed, usually after a general election or when a Government has been defeated in the Lower House, the representative of the Sovereign 'sends for' that Member of the Lower House who he thinks will be supported by a majority in the House; when assured of that Member's ability to command the necessary majority the Sovereign's representative commissions

that Member, as Prime Minister or Premier, to form a Ministry. Persons to be appointed to the rank of Minister are usually selected either by the Prime Minister or Premier personally or by ballot by Government party members from Members of Parliament belonging to that party or coalition of parties constituting a majority in the Lower House. Irrespective of the method of selecting ministers it is customary for the Prime Minister or Premier to allocate ministerial portfolios, after which the Sovereign's representative formally approves the appointment of each Minister.

A Minister generally holds one or more portfolios and may administer one or more departments. Although each Minister is answerable to Parliament for the administration of his department it is customary for him to be supported by all other Ministers, provided he acts and speaks within the broad framework of established policy.

The Cabinet is a ministerial body which may comprise all Ministers, as in South Australia, or senior Ministers only, as in the Commonwealth. It does not form part of the legal machinery of government and details of its proceedings are not normally made public.

In each State and in the Commonwealth, there is an Executive Council which is a constitutional body formed to advise the Sovereign's representative in the exercising of executive power. Traditionally attendance is limited to the Sovereign's representative and Ministers of the day, although actual membership may be wider. Meetings of Executive Council are formal and official in character, and a record of proceedings is kept by the Secretary or Clerk: decisions of Cabinet are, where appropriate, given legal form; appointments are made and resignations accepted; proclamations are issued, and regulations are approved.

### Committees

At one stage in the consideration of every Bill each House resolves itself into Committee for freer discussion of proposed legislation than would be possible under the rules of formal debate usually applied in Parliament.

In addition there is a Committee system whereby a limited number of Members enquire into and report on particular matters thus enabling a greater volume of work to be handled more effectively. There are Joint Committees, consisting of members of both Houses, and each House has committees to attend to its own functions. Standing Committees (*e.g.* the South Australian Public Works Standing Committee) consider matters of a continuing or recurring nature, and *ad hoc* committees are formed to enquire into and report on specific matters as they arise.

Party representation on Joint and House Committees is usually proportionate to representation in Parliament or the appropriate House respectively.

### Administration

The pattern of public administration in South Australia is determined by the division and delegation of statutory authority already mentioned. Various aspects and areas of administration are attended to by Commonwealth and State Government departments, by local government authorities, and by semi-government instrumentalities deriving authority and responsibility from either Commonwealth or State legislation. Within this framework numerous boards and committees exercise administrative and, in some cases, judicial powers.

These various levels of administration are largely interdependent and complementary. Some items of Commonwealth legislation are completely, or almost

completely administered by State authorities, often in matters in which (the Commonwealth and the State having concurrent powers) Commonwealth legislation either supplements or supersedes State legislation, *e.g.* the South Australian Supreme Court applies the Commonwealth Matrimonial Causes Act in this State. Performance of State functions by Commonwealth authorities is neither as frequent nor as extensive, but there are instances of the provision of services or facilities, *e.g.* the Commonwealth Electoral Office maintains the House of Assembly electoral roll; State Land Tax may be paid at Post Offices.

### Judicature

The degree to which South Australians are subject to the jurisdiction of Commonwealth and State courts respectively varies with the type of action. Most criminal and civil actions are heard, at least originally, in State courts, but many individuals are subject exclusively to Commonwealth jurisdiction in industrial matters.

Generally speaking, the decisions of the lower courts (the South Australian Magistrates and Local Courts) may be the subject of appeal to the State Supreme Court, and the decisions of this higher court, acting in either its original or appellate jurisdiction, may be the subject of appeal to the High Court of Australia. An ultimate appeal may, with the consent of the High Court, be made to the Privy Council.

Included in the jurisdiction of the High Court of Australia is the review of legislation to test its constitutional validity.

## 3.2 COMMONWEALTH GOVERNMENT

### Federation

The Commonwealth of Australia was proclaimed as from 1 January 1901 in 'An Act to constitute the Commonwealth of Australia', a statute of the Imperial Parliament, which received Royal assent in July 1900. The draft constitution, which was enacted with only minor amendment, had been prepared at inter-colonial conferences during 1897, 1898, and 1899, and was accepted at referenda during 1899 by South Australia, New South Wales, Victoria, Queensland, and Tasmania, and in 1900 by Western Australia.

### Separation of Powers

The Commonwealth Constitution provides, in sections 52, 69, 86, 90, and 115, for certain powers to be vested exclusively in the Commonwealth Government and, in section 51, for certain specified fields of interest to be common to both Commonwealth and State Governments; in cases of conflicting legislation, that of the Commonwealth prevails to the extent of the inconsistency. All other fields of interest remain the exclusive province of the State Governments until amendment is made to the Commonwealth Constitution Act or until the State Parliaments cede particular powers to the Commonwealth Parliament, as was the case in 1921 when the States transferred to the Commonwealth full control over air navigation.



### **Financial Resources**

Since Federation the distribution of financial resources between the Commonwealth and the States has been an almost constant problem. Under the original terms of the Constitution the Commonwealth, for ten years, returned to the States three quarters of the net revenues from the duties of customs and excise; provision also existed for general and particular grants to the States. Significant changes have been made in the distribution of financial resources since 1910. These are reviewed in some detail in Part 12—Public Finance.

### **COMMONWEALTH LEGISLATURE**

The Commonwealth Constitution provides that 'the legislative power of the Commonwealth shall be vested in a Federal Parliament, which shall consist of the Queen, a Senate, and a House of Representatives'. Provision for constitutional amendment includes a requirement that a proposed amendment must be submitted to a referendum.

### **Franchise**

Elections for both Houses of Parliament are conducted by secret ballot. There is universal adult suffrage of British subjects who have resided in Australia for at least six months and who are not of unsound mind, convicted and under sentence for any offence punishable by imprisonment for one year or longer, attainted of treason, or holders of temporary entry permits under the Migration Act.

Compulsory voting was introduced in 1924.

In 1962 special provision was made for the enfranchisement of Australian Aborigines in all States, subject to residence for one month in the subdivision for which enrolment is sought. They are not compelled to enrol as electors, but once enrolled they must vote. Aborigines in South Australia already held this entitlement for Federal elections by virtue of their enfranchisement under similar conditions for State House of Assembly elections.

### **EXECUTIVE GOVERNMENT**

#### **Governor-General**

On 30 April 1969 His Excellency the Rt Hon. Sir Paul Meernaa Caedwalla Hasluck, G.C.M.G., was sworn in as the eighteenth Governor-General of the Commonwealth. His authority as the Queen's representative is derived from Letters Patent, Instructions under the Royal Sign Manual and Signet, and the relevant sections of the Commonwealth Constitution.

#### **Executive Council**

Members of the Federal Executive Council are chosen, summoned and sworn by the Governor-General and hold office during his pleasure. All Ministers are members. Councillors usually retain membership for life but it is customary for attendance at meetings to be limited to Ministers of the day.

#### **Ministry**

Members of the thirty-sixth Ministry (the first Gorton Ministry) are listed below; the State in which each Minister's electorate is situated is shown in parenthesis.

## Gorton Ministry from 13 February 1969

*Prime Minister*

The Rt Hon. J. G. Gorton, M.P. (Vic.)

*Deputy Prime Minister and Minister for Trade and Industry*

The Rt Hon. J. McEwen, C.H., M.P. (Vic.)

*Treasurer*

The Rt Hon. W. McMahon, M.P. (N.S.W.)

*Minister for Defence*

The Hon. A. Fairhall, M.P. (N.S.W.)

*Minister for Primary Industry*

The Hon. J. D. Anthony, M.P. (N.S.W.)

*Postmaster-General and Vice President of the Executive Council*

The Hon. A. S. Hulme, M.P. (Qld.)

*Minister for National Development*

The Hon. D. E. Fairbairn, D.F.C., M.P. (N.S.W.)

*Minister for Labour and National Service*

The Hon. L. H. E. Bury, M.P. (N.S.W.)

*Minister for Shipping and Transport and Assisting the Minister for Trade and Industry*

The Hon. I. McC. Sinclair, M.P. (N.S.W.)

*Minister for Supply and Leader of the Government in the Senate*

Senator The Hon. K. McC. Anderson, (N.S.W.)

*Minister for Education and Science*

The Hon. J. M. Fraser, M.P. (Vic.)

*Minister for External Affairs*

The Hon. G. Freeth, M.P. (W.A.)

(The above Ministers constitute the Cabinet)

*Minister for External Territories*

The Hon. C. E. Barnes, M.P. (Qld.)

*Minister for Civil Aviation and Assisting the Treasurer*

The Hon. R. W. C. Swartz, M.B.E., E.D., M.P. (Qld.)

*Minister for Immigration*

The Hon. B. M. Snedden, Q.C., M.P. (Vic.)

*Minister for Health*

The Hon. A. J. Forbes, M.C., M.P. (S.A.)

*Minister for Repatriation*

Senator The Hon. G. C. McKellar (N.S.W.)

*Minister for Housing*

Senator The Hon. Dame Annabelle J. M. Rankin, D.B.E. (Qld.)

*Attorney-General*

The Hon. N. H. Bowen, Q.C., M.P. (N.S.W.)

*Minister for the Navy*

The Hon. C. R. Kelly, M.P. (S.A.)

*Minister for the Interior*

The Hon. P. J. Nixon, M.P. (Vic.)

*Minister for the Army*

The Hon. P. R. Lynch, M.P. (Vic.)

*Minister for Customs and Excise*

Senator The Hon. M. F. Scott (W.A.)

*Minister for Social Services and Minister in Charge of Aboriginal Affairs*

The Hon. W. C. Wentworth, M.P. (N.S.W.)

*Minister for Works, and under the Minister for Trade and Industry, Minister-in-Charge of Tourist Activities*

Senator The Hon. R. C. Wright (Tas.)

*Minister for Air and Leader of the Government in the House of Representatives*

The Hon. G. D. Erwin, M.P. (Vic.)

**Salaries and Allowances**

As from 1 December 1968 the annual salary for each member is \$9,500 with electorate allowances of \$2,750 for city House of Representatives members, \$3,350 for country House of Representatives members and \$2,650 for senators.

The following additional payments are also made:

Prime Minister—\$21,250 plus expense allowance of \$10,300.

Deputy Prime Minister—\$12,500 plus expense allowance of \$4,600.

Treasurer—\$12,250 plus expense allowance of \$4,600.

Senior Ministers—\$10,500 plus expense allowance of \$4,600.

Other Ministers—\$7,500 plus expense allowance of \$4,000.

Speaker (House of Representatives)—\$7,500 plus expense allowance of \$4,000.

President (Senate)—\$7,500 plus expense allowance of \$4,000.

Chairman of Committees (House of Representatives)—\$3,125.

Chairman of Committees (Senate)—\$3,125.

Leader of the Opposition (House of Representatives)—\$10,500 plus expense allowance of \$4,600.

Deputy Leader of the Opposition (House of Representatives)—\$5,000 plus expense allowance of \$1,500.

Leader of the Opposition (Senate)—\$5,000 plus expense allowance of \$1,500.

Deputy Leader of the Opposition (Senate)—\$1,625 plus expense allowance of \$750.

Leader of the Australian Democratic Labor Party (Senate)—\$1,000 plus expense allowance of \$500.

Government Whip (House of Representatives)—\$1,500.

Other Whips (House of Representatives)—\$1,250.

Whips (Senate)—\$1,250.

**THE SENATE**

The Senate is the Upper House. Originally it was intended that this House should protect the rights and interests of the States, but with the growth of the parliamentary system of party-line voting, its role has become mainly that of a house of review.

### Representation

At present the Senate consists of sixty members—ten from each State. The original provision was that each State, voting as a single electorate, should elect six Senators but by the Representation Act of 1948, which was effective for the 1949 elections, the number was raised to ten. Except in extraordinary circumstances each Senator is elected for a term of six years, five from each State retiring every three years.

Parliament has the power to vary the number of Senators above a minimum of six for each State. Under the terms of the Constitution any variation in the number of Senators necessitates a change in the number of members of the House of Representatives.

The party representation in the Senate since 1 July 1968 has been:

State	To Retire 30 June 1971				To Retire 30 June 1974			
	L.P.	C.P.	A.L.P.	Others	L.P.	C.P.	A.L.P.	Others
New South Wales ....	2	1	2	—	1	1	3	—
Victoria .....	2	—	2	1 (a)	1	1	2	1 (a)
Queensland .....	1	1	2	1 (a)	1	1	2	1 (a)
South Australia .....	2	—	3	—	3	—	2	—
Western Australia ....	2	1	2	—	2	1	2	—
Tasmania .....	2	—	3	—	2	—	2	1 (b)

L.P.—Liberal Party of Australia (including Liberal and Country League of South Australia and Liberal Country Party of Victoria). C.P.—Country Party. A.L.P.—Australian Labor Party.

(a)—Australian Democratic Labor Party.

(b)—Australia Party

The members representing South Australia in the Senate are:

*To Retire 30 June 1971:*

Cameron, Martin Bruce<sup>(1)</sup> (L.C.L.)

Davidson, Gordon Sinclair (L.C.L.)

Drury, Arnold Joseph (A.L.P.)

Ridley, Clement Frank (A.L.P.)

Toohy, James Philip (A.L.P.)

*To Retire 30 June 1974:*

Bishop, Reginald (A.L.P.)

Buttfield, Nancy Mrs. (L.C.L.)

Cavanagh, James Luke (A.L.P.)

Laucke, Condor Louis (L.C.L.)

Young, Harold William (L.C.L.)

(1) Appointed after death of Senator Lought on 13 May 1969. This Senator will retire in 1971 if re-elected at the next general election.

### Elections for the Senate: Voting, South Australia

Date of Election	Electors Enrolled	Votes Recorded		Informal Votes	
		Number	Percentage of Electors Enrolled	Number	Percentage of Votes Recorded
10 December 1949 ..	434,224	420,437	96.82	48,838	11.62
28 April 1951 .....	440,454	427,593	97.08	24,792	5.80
9 May 1953 .....	453,496	437,583	96.49	21,297	4.87
10 December 1955 ..	462,747	444,827	96.13	39,802	8.95
22 December 1958 ..	490,930	473,832	96.52	36,677	7.74
9 December 1961 ...	521,396	501,312	96.15	28,284	5.64
5 December 1964 ...	551,341	528,464	95.85	39,421	7.46
25 November 1967 ..	594,480	568,823	95.68	32,864	5.78

Prior to the election in 1949 the system of preferential voting was used for Senate elections, but for the 1949 and subsequent elections a system of proportional representation has been used.

### THE HOUSE OF REPRESENTATIVES

#### Representation

The members of the House of Representatives (the Lower House) are elected in single-member electorates. The number of electorates into which a State is divided is determined by the proportion that the population of the State bears to the population of the Commonwealth as a whole. Section 24 of the Commonwealth Constitution provides that the number of members in the House of Representatives shall be as nearly as possible twice the number of Senators and prescribes the formula to be used, 'until the Parliament otherwise provides', for allocating to each State its share of the available seats, but stipulates that no original State shall have less than five members in the House. In addition one member is elected from both the Northern Territory and the Australian Capital Territory.

In the redistribution of seats on the basis of the Census of 30 June 1966 South Australia gained a seat. Eleven members from South Australia were elected for a term of three years on 26 November 1966, but at the 1969 election twelve members will be returned from South Australia.

Preferential voting is used for elections for the House of Representatives.

At 1 July 1969 representation in this House was as follows:

Party	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Total
L.P. ...	19	18	8	8	4	2	—	—	59
C.P. ...	9	5	4	—	2	—	1	—	21
A.L.P. .	17	9	6	3	3	3	—	1	42
Ind. ...	1	1	—	—	—	—	—	—	2

L.P.—Liberal Party of Australia (including Liberal and Country League of South Australia and Liberal Country Party of Victoria). C.P.—Country Party. A.L.P.—Australian Labor Party. Ind.—Independent.

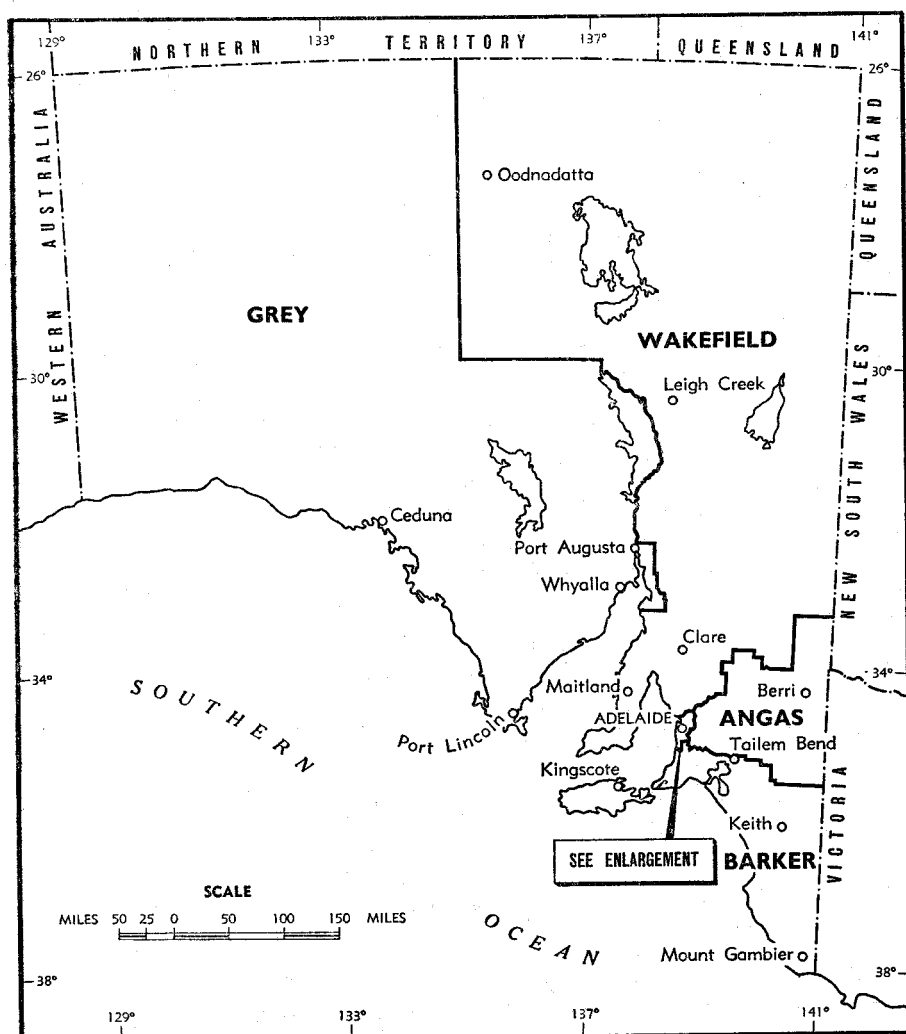
### House of Representatives, 1966 Elections

#### Voting and Party Representation in South Australian Electorates

Electorate	Electors on Roll	Electors Voting	Successful Candidates		
			Name	Party	First Preference Votes
Adelaide .....	32,920	31,282	Jones, A. T.	L.C.L.	14,724
Angas .....	45,104	43,626	Giles, G. O'H.	L.C.L.	30,070
Barker .....	53,374	51,716	Forbes, Hon. A. J.	L.C.L.	33,921
Bonython .....	88,083	84,324	Nicholls, M. H.	A.L.P.	40,133
Boothby .....	45,891	43,914	McLeay, J. E.	L.C.L.	28,187
Grey .....	49,630	47,628	Jessop, D. S.	L.C.L.	22,562
Hindmarsh .....	55,131	53,112	Cameron, C. R.	A.L.P.	26,096
Kingston .....	69,071	66,881	Brownbill, Miss K.	L.C.L.	35,041
Port Adelaide ....	45,593	43,839	Birrell, F. R.	A.L.P.	23,766
Sturt .....	53,285	51,032	Wilson, I. B. C.	L.C.L.	31,479
Wakefield .....	47,383	45,987	Kelly, Hon. C. R.	L.C.L.	31,280

SOUTH AUSTRALIA  
COMMONWEALTH ELECTORAL DIVISIONS

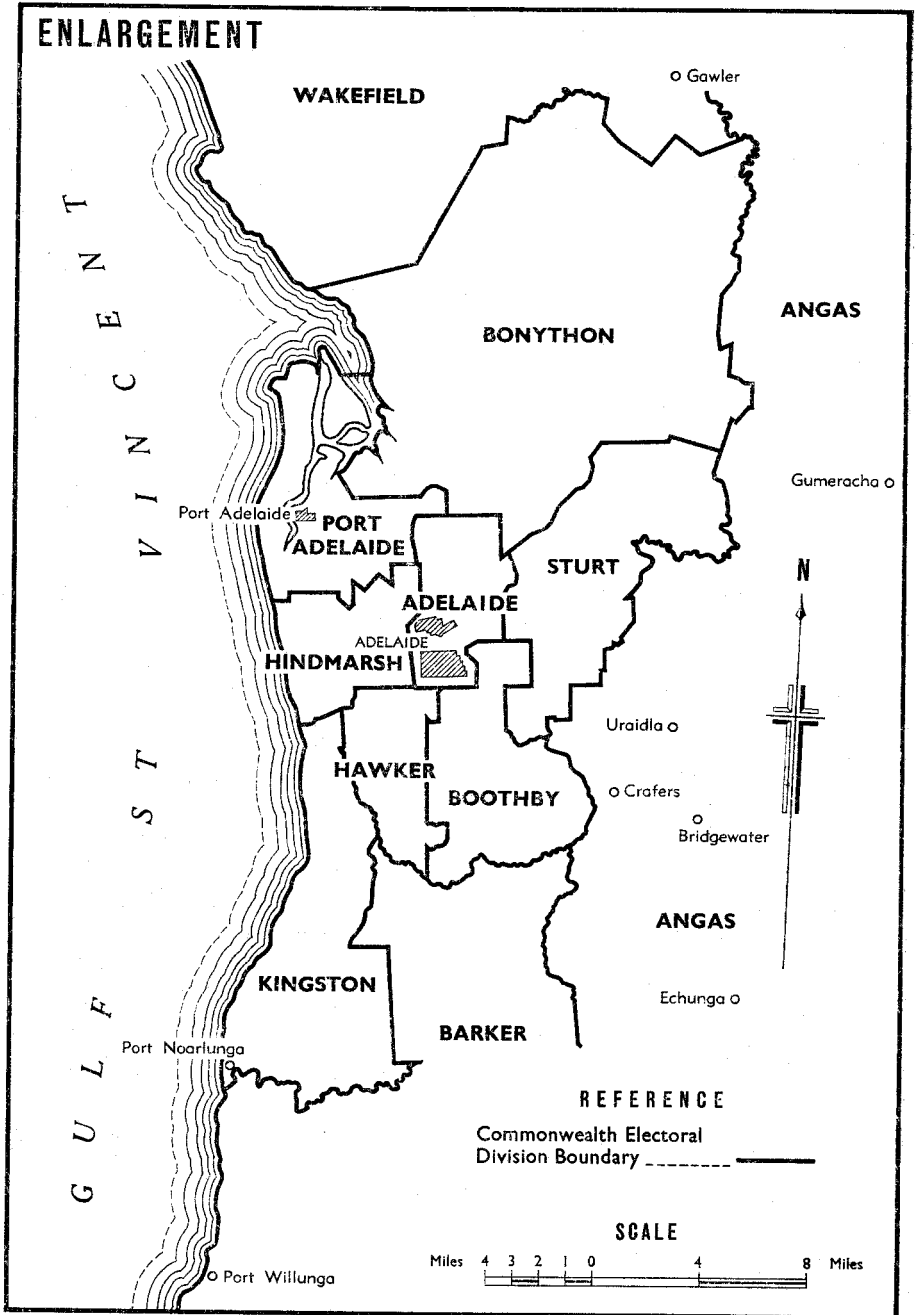
As proclaimed 21 November 1968



MAP 7

# PORTION OF SOUTH AUSTRALIA COMMONWEALTH ELECTORAL DIVISIONS

As proclaimed 21 November 1968



MAP 8

## Elections for the House of Representatives: Voting, South Australia

Date of Election	Electors Enrolled	Votes Recorded		Informal Votes	
		Number	Percentage of Electors Enrolled	Number	Percentage of Votes Recorded
10 December 1949 .	434,224	420,437	96.82	9,380	2.23
28 April 1951 . . . . .	440,454	(a)384,082	(a)97.09	7,910	2.06
29 May 1954 . . . . .	455,872	(a)357,854	(a)96.77	8,812	2.46
10 December 1955 .	462,747	444,827	96.13	18,050	4.06
22 December 1958 .	490,930	473,832	96.52	15,619	3.30
9 December 1961 .	521,396	501,312	96.15	15,629	3.12
30 November 1963 .	541,536	523,135	96.60	13,963	2.67
26 November 1966 .	585,465	563,341	96.22	16,220	2.88

(a) Contested electorates only.

## REFERENDA

Alteration to the Commonwealth Constitution must be initiated in the Commonwealth Parliament and requires the approval of a majority of electors voting in a majority of the States as well as a majority of all the electors voting in the Commonwealth as a whole.

Of the twenty-six proposals so far submitted to the people of Australia only five have been approved (one in each of 1906, 1910, 1928, 1946 and 1967).

The most recent referendum (1967) proposed two alterations to the Constitution: the first, to sections 7 and 24-27, sought approval to alter the Constitution so that the number of members of the House of Representatives might be increased without necessarily increasing the number of Senators; the second, to sections 51 and 127, sought approval to alter the Constitution so as to omit certain words relating to the people of the Aboriginal race in any State and so that Aborigines would be counted in reckoning the population.

All States and a majority of electors in the Commonwealth voted in favour of the proposal regarding Aborigines while all States (except New South Wales) and a majority of Commonwealth voters rejected the Parliamentary proposal.

## 3.3 GOVERNMENT OF SOUTH AUSTRALIA

## EARLY CONSTITUTIONAL HISTORY

As has been described in Part 2 the Foundation Act for South Australia provided for the powers of government in the new colony to be shared by a Governor and a Board of Colonisation Commissioners. The Board, which was to be represented in the Colony by a Resident Commissioner, was given power to dispose of Crown Lands in the Colony at a fixed price and to apply the funds derived therefrom to the provision of passages for specially chosen immigrants from the United Kingdom. The other executive and legislative powers in the



Colony were entrusted either to the Governor alone or to the Governor associated with a Council of Government, which consisted of certain government officials presided over by the Governor.

Many problems were associated with the division of authority thus created, and during the first few years of its existence the Colony experienced very considerable administrative and financial difficulties. The Colonisation Commissioners, in their Fourth Annual Report to the Secretary of State for the Colonies, complained that 'the boundary line between the power of the local government and that of the commissioners was not distinctly drawn'. The Foundation Act was amended in 1838 and Lt-Col Gawler was appointed both Governor and Resident Commissioner. Although this change brought about unity of action between the two authorities within South Australia it failed to provide a satisfactory solution for the Colony's financial problems. Consequently in 1842 the Imperial Parliament passed legislation repealing the original 1834 Foundation Act and the amending 1838 Act; with the repeal of those Acts the authority ceased under which the Board of South Australian Commissioners and the Resident Commissioner exercised their functions. Thus all power was vested in the Colonial Office, and South Australia was placed on the same footing as other Crown colonies.

The new Act provided authority for Her Majesty to set up within the province one of three alternative Councils of Legislature: a Legislative Council consisting of the Governor and seven other persons; a General Assembly elected by the freeholders and other inhabitants of the colony and a Legislative Council appointed by the Crown; or a single House of Assembly composed of both nominated and elected members. The provision prohibiting the transport of convicts to the colony was re-enacted.

It was the first of these three forms that was brought into operation, and under Royal Instructions issued at Windsor on 29 August 1842 the Legislative Council was constituted to consist of the Governor and three official and four non-official members (persons not holding offices under the Crown) nominated by the Crown.

From time to time the colonists persisted with petitions for popularly elected representation. By 1849 the colony was in a position to carry the costs of local self-government, and in England in the same year a committee of the Privy Council styled 'The Committee for the consideration of all matters relating to Trade and Foreign Plantations' presented a long and able report, in which it recommended that more extensive powers of self-government should be granted to the Australian colonies.

An Act 'for the better government of Her Majesty's Australian Colonies', which closely followed the recommendations of this Committee, was passed by the Imperial Parliament in 1850. This Act authorised the existing nominee Council in South Australia to set up a new form of Legislative Council, to consist of such members not exceeding twenty-four as should be thought fit, one-third of whom were to be appointed by Her Majesty and two-thirds of whom were to be elected; the Governor, with the advice and consent of the Legislative Council so to be established, was authorised to make laws for the peace, welfare, and good government of the colony. The enabling Act further provided that it should be lawful for the Governor and the partly nominated and partly elected Legislative Council, after its constitution in due course, to establish in lieu of such Legislative Council 'a Council and a House of Representatives or other separate Legislative Houses,

to consist respectively of such members, to be appointed or elected respectively by such persons and in such manner as by such Act or Acts shall be determined and to vest in such Council and House of Representatives or other separate Legislative Houses the powers and functions of the Legislative Council for which the same may be substituted.' Any Act passed for this purpose had to be reserved for signification of Her Majesty's pleasure thereon and laid before both Houses of the Imperial Parliament for at least thirty days before such consent was given.

The new Legislative Council was elected in July of 1851. In 1853 it exercised the authority given to it by the Imperial Act and passed a Bill for an Act to establish a Parliament in South Australia. Under the terms of this Bill the Parliament of South Australia was to consist of a Legislative Council and a House of Assembly.

The Members of the Legislative Council were to be nominated by Her Majesty and were to hold office for life. The House of Assembly was to consist initially of thirty-six members who were to be elected by adult male inhabitants who held a freehold estate of the clear value of \$40, or were householders occupying a dwellinghouse of the clear annual value of \$10, or were rated by any municipality or district council within the district for which they voted, or had a leasehold estate in possession of the value of \$20 per annum, with not less than one year to run.

As was required by the Imperial Act the Bill was forwarded to London to be laid before both Houses of the Imperial Parliament and to be submitted for Her Majesty's Assent.

A considerable body of the colonists opposed the principle of a nominated Legislative Council and favoured an elective Upper House. During the substantial period that elapsed between the despatch of the Parliament Bill to London and the receipt of the decision of the Imperial Authorities this group prepared a Memorial for transmission to Her Majesty. In this Memorial, which was subsequently signed by 5,000 persons, the protagonists of an elective Upper House expressed their strong opposition to certain of the provisions of the Parliament Bill and associated legislation. As a result the Queen in Council refused assent to the Bill, and it was returned to the South Australian Legislative Council for re-consideration.

### RESPONSIBLE GOVERNMENT

On 15 August 1855 the Legislative Council was dissolved, and elections for a new Council were held in September and October of the same year. A new Constitution Bill, making provision for an elective Upper House, was prepared by the Government and submitted in November to the newly elected Legislative Council. The Bill was debated at length and a number of amendments were adopted.

The Bill as amended was passed on 2 January 1856 and was referred for Her Majesty's Assent. It was submitted to the Queen in Council on 24 June and received Royal Assent. The 'Act to establish a Constitution for South Australia and to grant a Civil List to Her Majesty' came into force on 24 October 1856.

The principal provisions of the Act were as follows:

1. Parliament was to consist of two Houses—a Legislative Council and a House of Assembly.
2. The Legislative Council was to have eighteen members, to be elected by adult males possessing certain property qualifications.
3. The House of Assembly was to have thirty-six members, to be elected on the basis of manhood suffrage.
4. The life of the House of Assembly was to be three years.
5. All Bills for appropriating revenue or for imposing new taxes were to originate in the House of Assembly.
6. Power to appoint to all public offices was to be vested in the Governor acting with the advice and consent of the Executive Council.
7. Any Bill for an Act to alter the constitution of the Legislative Council or the House of Assembly had to have its second and third readings passed by an absolute majority of the total membership of each House.

The Constitution Act of 1855-1856 which inaugurated the system of Responsible Government in South Australia remains the basis of the State's present day Constitution Act, 1934-1965.

### VICE-REGAL REPRESENTATION

On 4 December 1968 Major-General Sir James William Harrison K.C.M.G., C.B., C.B.E., was sworn in as the Queen's representative in South Australia.

The title of the vice-regal representative has been varied from time to time. The first three holders of the Office were styled 'Governor and Commander-in-Chief', the next two, 'Lieutenant-Governor', and the following two, 'Captain-General and Governor-in-Chief'. The title then reverted to its original form until Federation in 1901.

Since then, because of the appointment of a 'Governor-General and Commander-in-Chief in and over the Commonwealth', the holder of the State office has been described simply as 'Governor', and this title is used in the table on the next page, which lists occupants of the office since the foundation of South Australia.

As titular head of the Government of South Australia the Governor exercises powers, duties, and functions, similar to those of a constitutional sovereign. On the one hand he is indirectly responsible to the Imperial Parliament through the Secretary of State for Commonwealth Relations, and on the other hand he usually acts on the advice of his Ministers, who take the responsibility for their advice. Nevertheless, the Governor retains important spheres of discretionary action and is thus enabled to maintain something of a safeguard against malpractice and

injustice, particularly in extreme circumstances. To ensure continuity of services, the Governor has power to appropriate up to \$1,200,000 per year for public service without specific Parliamentary authority.

### Governors of South Australia

Name	From	To
Captain John Hindmarsh, R.N., K.H. ....	28 December 1836	16 July 1838
Lt-Col George Gawler, K.H. ....	17 October 1838	15 May 1841
George Grey, Esq. ....	15 May 1841	25 October 1845
Lt-Col Frederick Holt Robe ....	25 October 1845	2 August 1848
Sir Henry E. F. Young ....	2 August 1848	20 December 1854
Sir Richard G. MacDonnell, C.B. ....	8 June 1855	4 March 1862
Sir Dominick Daly ....	4 March 1862	19 February 1868
Rt Hon. Sir James Fergusson, BART ....	16 February 1869	18 April 1873
Sir Anthony Musgrave, K.C.M.G. ....	9 June 1873	29 January 1877
Lt-Gen. Sir Wm F. D. Jervois, G.C.M.G., C.B. ....	2 October 1877	9 January 1883
Sir Wm C. F. Robinson, G.C.M.G. ....	19 February 1883	5 March 1889
Rt Hon. Earl of Kintore, G.C.M.G. ....	11 April 1889	10 April 1895
Sir Thomas F. Buxton, BART, G.C.M.G. ....	29 October 1895	29 March 1899
Rt Hon. Hallam, Baron Tennyson, K.C.M.G. .	10 April 1899	17 July 1902
Sir George R. Le Hunte, K.C.M.G. ....	1 July 1903	18 February 1909
Admiral Sir Day Hort Bosanquet, G.C.V.O., K.C.B.	18 February 1909	22 March 1914
Lt-Col Sir Henry L. Galway, K.C.M.G., D.S.O. .	18 April 1914	30 April 1920
Lt-Col Sir Wm E. G. Archibald Weigall, K.C.M.G. ....	9 June 1920	30 May 1922
Lt-Gen. Sir George T. M. Bridges, K.C.B., K.C.M.G., D.S.O. ....	4 December 1922	4 December 1927
Brig.-Gen. the Hon. Sir A. G. A. Hore-Ruthven, V.C., K.C.M.G., C.B., D.S.O. ....	14 May 1928	26 April 1934
Maj.-Gen. Sir W. J. Dugan, K.C.M.G., C.B., D.S.O.	28 July 1934	23 February 1939
Sir Charles M. Barclay-Harvey, K.C.M.G., ....	12 August 1939	26 April 1944
Lt-Gen. Sir C. W. M. Norrie, K.C.M.G., C.B., D.S.O., M.C. ....	19 December 1944	19 June 1952
Air Vice-Marshal Sir Robert A. George, K.C.M.G., K.C.V.O., K.B.E., C.B., M.C. ....	23 February 1953	7 March 1960
Lt-Gen. Sir Edric M. Bastyan, K.C.M.G., K.C.V.O., K.B.E., C.B. ....	4 April 1961	1 June 1968
Maj.-Gen. Sir James W. Harrison, K.C.M.G., C.B., C.B.E. ....	4 December 1968	

The Governor's normal term of office is five years, but he can be appointed for one or more subsequent terms. At present he is granted a salary of \$15,000 per annum, an expense allowance based on an amount of \$14,000 per year and altered in accordance with the Consumer Price Index number for Adelaide as the occasion arises, plus an allowance for payment of the salaries of his staff.

In the absence or prolonged illness of the Governor other persons have been appointed to administer the government of the State. These persons have been variously styled 'Lieutenant-Governor', 'Deputy-Governor', 'Deputy Lieutenant-Governor', and 'Administrator', and several of them have held office more than once. The sixteen persons so appointed have been:

Name	Occupancy of Office		Occasions in Office	Total Period	
	First	Most Recent		Years	Days
George Milner Stephen, Esq. ....	16/7/1838	17/10/1838	1	—	93
Boyle Travers Finnis, Esq. ....	20/12/1854	8/6/1855	1	—	170
Lt-Col Francis G. Hamley ....	20/2/1868	15/2/1869	1	—	362
Maj. James Harwood Rocke ....	6/4/1870	5/5/1870	1	—	29
Hon. Sir Richard D. Hanson, Chief Justice .....	7/12/1872	9/6/1873	1	—	184
Rt Hon. Sir Samuel J. Way, BART, Chief Justice .....	29/1/1877	17/11/1915	65	6	117
Sir William W. Cairns, K.C.M.G. ....	24/3/1877	17/5/1877	1	—	54
Hon. James P. Boucaut, Judge ....	26/10/1885	16/9/1897	9	—	263
Hon. William H. Bunday, Judge ....	30/7/1888	9/8/1888	1	—	10
Hon. Sir G. J. R. Murray, K.C.M.G., Chief Justice .....	25/9/1916	9/2/1942	103	6	47
Hon. Thomas Slaney Poole, Acting Chief Justice .....	20/3/1925	22/11/1925	2	—	240
Hon. Sir H. Angas Parsons, Acting Chief Justice .....	11/6/1935	19/2/1942	6	—	54
Hon. Sir J. Mellis Napier, K.C.M.G., Chief Justice .....	21/4/1942	4/12/1968	141	8	161
Hon. Sir Herbert Mayo, Judge ....	15/10/1946	9/1/1965	25	—	187
Hon. Sir G. S. Reed, Judge ....	24/7/1951	4/11/1957	5	—	31
Hon. J. J. Bray, Q.C., Chief Justice....	25/6/1968	14/10/1968	2	—	35

### CABINET AND EXECUTIVE GOVERNMENT

In South Australia all Ministers are members of the Cabinet and all Ministers are *ex officio* members of the Executive Council. Although the Governor may, subject to any law enacted by the Legislature, appoint other persons to the Executive Council, membership is in practice limited to Ministers of the day.

The Constitution Act of 1855-1856 provided that every Minister must be a member of either the Legislative Council or the House of Assembly or become a member within three months of appointment. However, in 1873 an amendment was made to the Act authorising the Governor to appoint an Attorney-General from outside Parliament; this provision was retained until 1953, and four Attorneys-General were so appointed.

The maximum number of Ministers has been varied from time to time. In 1856 the number was 5; in 1873—6; 1901—4; 1908—6; 1953—8; 1965—9. This is the lowest number of Ministers in any Parliament in the Commonwealth. In 1908 it was specified that no more than four Ministers were to be in the House of Assembly, but in 1953 this limit was increased to 5 and in 1965 to 6.

The Constitution of 1856 provided for salary payments to Ministers but not to other members. Salary payments to ordinary members commenced in 1887. The 1968-69 appropriation for salaries and allowances for nine Ministers is \$44,400 paid in addition to salaries and allowances received by Ministers as members.

Cabinet, as such, has no legal powers. Some Cabinet decisions result in the initiation and subsequent enactment of legislation; other decisions become legally binding through ratification by Executive Council or through powers vested in individual Ministers for the administration and control of their respective departments of government. Not only Government Departments are subject to Ministerial control; statutory authorities also come under some degree of Ministerial or Parliamentary oversight.

**Premiers**

Since the introduction of responsible government in South Australia the following thirty-six persons have held the office of Premier:

**Premiers of South Australia**

Name	Dates of Office	Total Period in Office	
		Years	Days
Hon. Boyle T. Finnis	24/10/1856- 21/8/1857	—	301
John Baker	21/8/1857- 1/9/1857	—	11
Sir Robt R. Torrens, G.C.M.G.	1/9/1857- 30/9/1857	—	29
Hon. Sir Richard D. Hanson	30/9/1857- 9/5/1860	2	222
Hon. Thos Reynolds	9/5/1860- 8/10/1861	1	152
Hon. G. M. Waterhouse	8/10/1861- 4/7/1863	1	269
Francis S. Dutton, C.M.G.	4/7/1863- 15/7/1863; 22/3/1865- 20/9/1865	—	193
Hon. Sir Henry Ayers, G.C.M.G.	15/7/1863- 4/8/1864; 20/9/1865-23/10/1865; 3/5/1867- 24/9/1868; 13/10/1868- 3/11/1868; 22/1/1872- 22/7/1873	4	35
Hon. Sir Arthur Blyth, K.C.M.G., C.B.	4/8/1864- 22/3/1865; 10/11/1871- 22/1/1872; 22/7/1873- 3/6/1875	2	254
Hon. John Hart, C.M.G.	23/10/1865- 28/3/1866; 24/9/1868-13/10/1868; 30/5/1870-10/11/1871	1	339
Hon. Sir James P. Boucaut, K.C.M.G., Q.C.	28/3/1866- 3/5/1867; 3/6/1875- 6/6/1876; 26/10/1877- 27/9/1878	3	11
Hon. H. B. Strangways	3/11/1868- 30/5/1870	1	208
Hon. Sir John Colton, K.C.M.G.	6/6/1876-26/10/1877; 16/6/1884- 16/6/1885	2	142
Hon. Sir William Morgan, K.C.M.G.	27/9/1878- 24/6/1881	2	270
Hon. Sir John Bray, K.C.M.G.	24/6/1881- 16/6/1884	2	358
Hon. Sir J. W. Downer, K.C.M.G., Q.C.	16/6/1885- 11/6/1887; 15/10/1892- 16/6/1893	2	239
Hon. Thomas Playford	11/6/1887- 27/6/1889; 19/8/1890- 21/6/1892	3	323
Hon. Sir J. A. Cockburn, K.C.M.G.	27/6/1889- 19/8/1890	1	53
Hon. Sir F. W. Holder, K.C.M.G.	21/6/1892-15/10/1892; 8/12/1899- 15/5/1901	1	274
Rt Hon. C. C. Kingston, Q.C., D.C.L.	16/6/1893- 1/12/1899	6	168
Hon. V. L. Solomon	1/12/1899- 8/12/1899	—	7
Hon. J. G. Jenkins	15/5/1901- 1/3/1905	3	290
Hon. Sir Richard Butler	1/3/1905- 26/7/1905	—	147
Thomas Price	26/7/1905- 5/6/1909	3	314
Hon. A. H. Peake	5/6/1909- 3/6/1910; 17/2/1912- 3/4/1915; 14/7/1917- 8/4/1920	6	312
Hon. John Verran	3/6/1910- 17/2/1912	1	259
Hon. Crawford Vaughan	3/4/1915- 14/7/1917	2	102
Hon. Sir H. N. Barwell, K.C.M.G.	8/4/1920- 16/4/1924	4	8
Hon. John Gunn	16/4/1924- 28/8/1926	2	134
Hon. Lionel L. Hill	28/8/1926- 8/4/1927; 17/4/1930- 13/2/1933	3	160
Hon. Sir R. L. Butler, K.C.M.G.	8/4/1927- 17/4/1930; 18/4/1933- 5/11/1938	8	210
Hon. R. S. Richards	13/2/1933- 18/4/1933	—	64
Hon. Sir Thomas Playford, G.C.M.G.	5/11/1938- 10/3/1965	26	125
Hon. F. H. Walsh	10/3/1965- 1/6/1967	2	83
Hon. D. A. Dunstan, Q.C.	1/6/1967- 17/4/1968	—	321
Hon. R. S. Hall	17/4/1968-		



**Ministry**

The Ministry, which was announced on 17 April 1968 following the resignation of the leader of the previous Ministry, the Honourable Donald Allan Dunstan, Q.C., M.P., is the sixty-second Ministry to hold office. The members are:

*Premier and Minister of Industrial Development*

Hon. Raymond Steele Hall, M.P.

*Chief Secretary, Minister of Health and Minister of Mines*

Hon. Renfrey Curgenven DeGaris, M.L.C.

*Treasurer and Minister of Housing*

Hon. Glen Gardner Pearson, M.P.

*Minister of Lands, Minister of Repatriation, Minister of Irrigation and Minister of Immigration and Tourism*

Hon. David Norman Brookman, M.P.

*Minister of Agriculture and Minister of Forests*

Hon. Clarence Ross Story, M.L.C.

*Minister of Works, Minister of Marine and Minister of Labour and Industry*

Hon. John William Hurtle Coumbe, M.P.

*Attorney-General, Minister of Social Welfare and Minister of Aboriginal Affairs*

Hon. Robin Rhodes Millhouse, M.P.

*Minister of Education*

Hon. Joyce Steele, M.P.

*Minister of Local Government and Minister of Roads and Transport*

Hon. Charles Murray Hill, M.L.C.

**PARLIAMENT**

Parliament is summoned, prorogued, or dissolved, by proclamation issued by the Governor. The two Houses of Parliament are the Legislative Council (Upper House) and the House of Assembly (Lower House).

**Voting System**

Members for both Houses are elected by secret ballot; the preferential system of voting is used. In filling the vacancy for each House of Assembly District and the first vacancy in each Legislative Council District the candidate who has received the largest number of first preference votes is elected if this number constitutes an absolute majority (*i.e.* greater than one-half of the total formal votes). If no candidate has received an absolute majority of first preference votes a second count is made in which the second preferences of the candidate who has received the fewest first preference votes are distributed. This distribution of second preferences of the successive candidate with the fewest votes is repeated until one candidate has received an absolute majority of votes.

The second vacancy in each Legislative Council District is filled by re-arranging all the ballot papers according to the first preferences and allotting each ballot paper of the first elected candidate according to the second preferences. If a candidate then has an absolute majority he is elected, otherwise subsequent counts are made eliminating the candidates with the fewest votes until one remaining candidate has received an absolute majority.

### **Members, Qualifications, and Privileges**

Certain requirements must be met before a person qualifies for membership of the South Australian Parliament. The following persons are not eligible for membership of either House: Judges, Ministers of Religion, persons under the age of twenty-one, aliens, members of the Commonwealth Parliament, persons who are not residents of South Australia, holders of contracts for the Public Service, occupants of offices of profit under the Crown, persons of unsound mind, persons attainted of treason, undischarged bankrupts and insolvent persons, and, amongst others, persons under sentence for any offence punishable by imprisonment for at least a year. Other requirements are different for each House; these are mentioned on pages 67 and 68.

Each member is required to take an oath or make an affirmation of allegiance to the Crown before being permitted to sit or vote in Parliament. All members of the Parliament are entitled to such privileges, immunities, and powers as were held by members of the House of Commons on 24 October 1856, the date on which the Constitution Act came into force.

### **Franchise**

Details of the franchise for the separate Houses are shown on pages 67 and 68.

South Australia was the first, at the general election of 25 April 1896, of the Australian States to give voting rights to women, and the existence of this provision in this State contributed to the decision to include full adult franchise in proposals for Federation.

For the first eighty-five years of responsible government voting for both Houses of Parliament was voluntary but the Electoral Act Amendment Act of 1942 made voting for the House of Assembly compulsory.

### **Functions of Parliament**

The function of Parliament is to legislate for the peace, order, and good government, of the State. Principal among the tasks of Parliament is the raising of revenue and the appropriation of funds for the development and maintenance of the State through its public services.

Legislation may be initiated by any member in either House except that money bills must be initiated by Ministers of the Crown in the House of Assembly; the Legislative Council may suggest amendments to money bills although it may not effect such amendments itself.

Most bills are initiated by the Government as a result of the deliberations of Cabinet. The Opposition and Independent members usually confine their activities to examination, criticism, and amendment, of Government measures.

Legislation, other than to amend the Constitution, may be passed by a simple majority of the votes of the members present.

### **Constitutional Amendment**

Alteration to the Constitution Act is in the hands of Parliament itself. An alteration to the Constitution requires at the second and third readings of the bill acceptance by a majority of all the members (not only those present or voting) of each House voting separately.

### Deadlocks

A deadlock results from the refusal by the Upper House to pass the same (or substantially the same) Bill during two consecutive Parliaments, provided that a general election for the Lower House has been held between the refusals and that on the second occasion an absolute majority of all the members of the Lower House voted in favour of the Bill at its second and third readings. In the event of a deadlock between the Houses, provision is made for the dissolution of both Houses or alternatively for the election of two additional members for each Legislative Council district.

### Life of Parliament

The term of office of each Parliament since the establishment of responsible government has been three years except in the case of the twenty-eighth Parliament. By legislation introduced in 1933 the life of the twenty-eighth Parliament was extended to five years. In 1937 the Constitution Act was amended to provide for each subsequent Parliament to have a life of five years. However, the twenty-ninth Parliament repealed this provision and re-introduced three-year Parliaments.

### Number of Members and Electorates

Alterations made to the number of members and number of electorates for each of the two Houses are shown in the following table:

Date	Legislative Council		House of Assembly	
	Members	Electorates	Members	Electorates
1856.....	18	1	36	17
1863.....	18	1	36	18
1875.....	18	1	46	22
1882.....	24	4	46	22
1884(a).....	24	4	52	26
1890.....	24	4	54	27
1902.....	18	4	42	13
1912(b).....	18	4	40	12
1915.....	20	5	46	19
1938.....	20	5	39	39

(a) Separate representation for Northern Territory.

(b) Cession of Northern Territory to Commonwealth control.

The present allocation of twenty-six country and thirteen metropolitan electorates for the House of Assembly was introduced in 1938. In 1956 alterations were made to the boundaries of electorates, but the number was unaltered. Under the Electoral Districts (Redivision) Act, 1968-1969, an Electoral Commission has been appointed to investigate and report on the possibility of dividing the State into forty-seven electorates. In May 1969 the Commission released a preliminary report dividing the State into metropolitan and country areas and its final recommendations are expected to be released in September 1969.

### **Salaries and Allowances**

The annual salary from 1 July 1969 is \$7,500 per member with allowances of \$1,400, \$1,850, or \$2,200 depending on the distance of the member's electorate from the City of Adelaide. The following additional payments are also made:

Premier and Treasurer—\$7,500, plus expense allowance of \$1,650.

Chief Secretary—\$4,750, plus expense allowance of \$1,350.

Other Ministers—\$4,000, plus expense allowance of \$1,100.

President of Legislative Council and Speaker of House of Assembly—each \$2,400, plus expense allowance of \$400.

Chairman of Committees, House of Assembly—\$1,200.

Leader of the Opposition—\$3,000, plus expense allowance of \$800.

Deputy Leader of the Opposition—\$900.

Government Whip—\$800.

Opposition Whip—\$800.

Leader of the Opposition in the Legislative Council—\$700, plus expense allowance of \$350.

### **Superannuation**

All members are required to contribute to a superannuation fund established under the Parliamentary Superannuation Act, 1948-1965 which provides for the payment of superannuation pensions to persons or widows or widowers of persons who have served as members of the State Parliament. No member can qualify for a pension until he has served a minimum of eight years either in one term or as an aggregate of terms. The standard contribution to this fund is \$456 per annum. According to the annual contribution and the length of service the pension payable varies between \$1,456 and \$4,264 per annum.

At 30 June 1968 there were fifty-nine contributors to the fund; and sixteen ex-members and twenty widows were in receipt of pensions.

## **LEGISLATIVE COUNCIL**

### **Members and Electorates**

Each member of the Legislative Council, in addition to fulfilling the general requirements mentioned on page 65, must have attained the age of thirty years, be a British subject, and have resided in the State for at least three years. For the purpose of electing members to the Council the State is divided into five electorates each having four members. Each electorate elects two members every three years, and each member occupies his seat for six years. A casual vacancy may occur when a member dies, or resigns, or ceases to satisfy any qualification for membership. Such a casual vacancy is filled, at a by-election in the particular electorate, for the unexpired portion of the previous member's term.

It is not unusual for many of the candidates for this House to be returned unopposed at an election.

The first woman member was elected to this House in 1959.

### **Franchise**

The franchise for the Legislative Council has been varied from time to time since the commencement of responsible government. Under the Constitution Act

of 1855-1856 the franchise for the Legislative Council was extended to adult males possessing one of the following property qualifications:

- (a) A freehold of the value of \$100.
- (b) A leasehold of the annual value of \$40, and having three years to run or including a right of pre-emption.
- (c) Occupation of a dwelling house of the annual value of \$50.

The Constitution Act Amendment Act, 1894, which extended the franchise of the Lower House to women, also gave them the right to vote at elections for the Legislative Council, subject to the existing property qualifications applicable to men.

By an Act of 1907 the franchise for the Legislative Council was extended to a number of additional categories of persons. These included occupiers of dwelling houses of an annual rental value of at least \$34, certain holders of Crown leases who were not enfranchised by previous legislation, certain ministers of religion, head teachers of schools, postmasters, railway station masters, and police officers. These persons lost their special franchise when the qualifications of voters for the Legislative Council were again revised in 1913.

The 1913 legislation, which in its essentials remains in force today, provided that the right to vote for the Legislative Council should be granted to 'any person who is an inhabitant occupier as owner or tenant of any dwelling house; provided that no person shall be entitled to vote by reason of being a joint occupier of any dwelling house'. The franchise is also extended to certain past and present defence personnel who would not otherwise qualify.

#### **President and Chairman of Committees**

At the first meeting of the Council in each Parliament the members choose one from among their number to fill the position of President and Chairman of Committees. The person so elected is then entitled to a casting vote only.

### **HOUSE OF ASSEMBLY**

#### **Seat of Government**

The House of Assembly can be regarded as the more important Chamber in that the Government of the day holds its position as such only so long as it controls a majority in this House. When it no longer controls such a majority in vital issues, particularly 'money bills', the Government must resign or go to the polls. Once defeated in the Lower House on a 'money bill' the Government is unable to finance the administration of the State.

#### **Franchise and Membership**

Members of this House are elected for a maximum period of three years, for single-members districts, on a system of universal adult suffrage of British subjects resident in the State for at least six months. Certain present and past defence personnel are enfranchised by a special provision if they would not otherwise be entitled to vote. Subject to the exclusions mentioned on page 65 election to this House is open to those eligible to vote in an election for the House. The seat of a member becomes vacant in cases similar to those stated for Legislative Councillors and may be filled at a by-election.

The first woman member was elected to this House in 1959.

#### **Officers and their Functions**

A Speaker presides over the House, and his election is the first business when a Parliament first meets. He presides over debate, maintains order, represents the House officially, communicates its wishes and resolutions, defends its privileges when necessary, and applies its procedure. The Speaker may exercise a

casting vote only. There is also a Chairman of Committees elected by the House at the beginning of each Parliament; he presides over the deliberations of the House in Committee and acts as Deputy Speaker when required.

### ELECTIONS AND PARTY REPRESENTATION

It appears from the following table that compulsory voting for the House of Assembly, introduced by the Electoral Act Amendment Act of 1942, also caused a considerable increase in voting for the Legislative Council.

Voting details of the most recent election are of particular interest in that all House of Assembly districts were contested at the same election for the first time since 1918 while for the Legislative Council it was the first time since 1947. Furthermore it was also the first time since 1918 that all Legislative Council and House of Assembly districts have been contested at the same election.

#### Voting: South Australian Parliament, 1933 to 1968

Date	Legislative Council				House of Assembly			
	Electors on Roll	Contested Electorates			Electors on Roll	Contested Electorates		
		Electors Enrolled	Electors Voting	Per Cent		Electors Enrolled	Electors Voting	Per Cent
8 April 1933 .....	133,152	39,415	25,309	64.21	338,576	307,285	182,693	59.45
19 March 1938 .....	129,135	129,135	91,165	70.60	364,884	352,423	223,136	63.31
29 March 1941 .....	133,358	115,952	70,660	60.94	378,265	339,263	171,978	50.69
29 April 1944 (a) .....	142,314	98,482	81,791	83.05	401,747	289,032	255,883	88.53
8 March 1947 .....	155,847	155,847	124,826	80.10	418,308	306,059	285,765	93.37
4 March 1950 .....	161,917	68,347	52,954	77.48	437,832	311,658	290,306	93.15
7 March 1953 .....	168,758	97,968	79,373	81.02	449,630	354,273	336,592	95.01
3 March 1956 .....	174,241	22,963	16,002	69.69	468,303	299,048	280,811	93.90
7 March 1959 .....	187,248	86,278	70,007	81.14	497,456	426,340	400,531	93.95
3 March 1962 .....	201,517	118,218	98,786	83.56	531,228	444,197	417,462	93.98
6 March 1965 .....	213,377	186,899	149,910	80.21	562,824	542,436	513,064	94.59
2 March 1968 .....	275,701	275,701	262,328	95.15	609,626	609,626	575,948	94.48

(a) First election under compulsory voting for the House of Assembly.

The following table shows the Party representation in both Houses of the South Australian Parliament resulting from each general election from 1933.

#### Party Representation, South Australian Parliament, 1933 to 1968

Date	Legislative Council				House of Assembly			
	L.C.L.	A.L.P.	Independent	Other	L.C.L.	A.L.P.	Independent	Other
8 April 1933 .....	16	2	1	1(a)	29	6	4	{ 4(a) 3(b) 2(c)
19 March 1938 .....	15	2	1	2(c)	15	9	13	2(c)
29 March 1941 .....	14	4	1	1(c)	21	11	5	2(c)
29 April 1944 .....	15	5	—	—	20	16	3	—
8 March 1947 .....	16	4	—	—	23	13	3	—
4 March 1950 .....	16	4	—	—	23	12	4	—
7 March 1953 .....	16	4	—	—	21	14	4	—
3 March 1956 .....	16	4	—	—	21	15	3	—
7 March 1959 .....	16	4	—	—	20	17	2	—
3 March 1962 .....	16	4	—	—	18	19	2	—
6 March 1965 .....	16	4	—	—	17	21	1	—
2 March 1968 .....	16	4	—	—	19	19	1	—

NOTE : L.C.L.—Liberal and Country League ; A.L.P.—Australian Labor Party.

(a) Parliamentary Labor. (b) Lang Labor. (c) Independent Labor.

Of the thirty-nine electorates for the House of Assembly thirteen are metropolitan and twenty-six are country. The table below shows the electoral returns for the general election held on 2 March 1968.

### House of Assembly: Party Representation, 1968

Electorate	Electors on Roll	Electors Voting	Successful Candidate		
			Name	Party	First Preference Votes
<b>Metropolitan:</b>					
Adelaide .....	15,061	14,109	Lawn, S. J.	A.L.P.	8,315
Burnside .....	37,430	35,648	Steele, Hon. Mrs. J.	L.C.L.	20,609
Edwardstown .....	34,121	32,047	Virgo, G. T.	A.L.P.	18,055
Enfield .....	45,510	43,096	Jennings, J. J.	A.L.P.	28,246
Glenelg .....	37,422	35,615	Hudson, H. R.	A.L.P.	18,711
Hindmarsh .....	22,521	21,411	Hutchens, Hon. C. D.	A.L.P.	14,874
Mitcham .....	27,057	25,164	Millhouse, Hon. R. R.	L.C.L.	16,056
Norwood .....	19,262	18,089	Dunstan, Hon. D. A.	A.L.P.	9,981
Port Adelaide .....	22,565	21,088	Ryan, J. R.	A.L.P.	13,911
Semaphore .....	24,306	23,112	Hurst, R. E.	A.L.P.	15,613
Torrens .....	19,488	18,242	Coumbe, Hon. J. W. H.	L.C.L.	9,126
Unley .....	19,163	17,811	Langley, G. R. A.	A.L.P.	8,820
West Torrens .....	39,364	37,187	Broomhill, G. R.	A.L.P.	20,283
<b>Country:</b>					
Albert .....	8,154	7,780	Nankivell, W. F.	L.C.L.	5,872
Alexandra .....	13,870	13,306	Brookman, Hon. D. N.	L.C.L.	6,349
Angas .....	6,794	6,531	Teusner, Hon. B. H.	L.C.L.	4,351
Barossa .....	17,975	17,085	Byrne, Mrs. M. V.	A.L.P.	8,792
Burra .....	5,777	5,570	Allen, E. C.	L.C.L.	3,131
Chaffey .....	7,880	7,358	Arnold, P. B.	L.C.L.	3,392
Eyre .....	7,655	7,345	Edwards, E. C. A.	L.C.L.	3,292
Flinders .....	7,717	7,385	Pearson, Hon. G. G.	L.C.L.	4,285
Frome .....	4,988	4,634	Casey, T. M.	A.L.P.	2,672
Gawler .....	35,122	32,568	Clark, J. S.	A.L.P.	20,573
Gouger .....	12,523	11,841	Hall, Hon. R. S.	L.C.L.	6,557
Gumeracha .....	7,745	7,100	Giles, B. L.	L.C.L.	4,740
Light .....	5,941	5,722	Freebairn, J. S.	L.C.L.	3,873
Millicent .....	7,649	7,342	Corcoran, J. D.	A.L.P.	3,635
Mount Gambier .....	10,142	9,691	Burdon, A. R.	A.L.P.	5,567
Murray .....	8,727	8,415	Wardle, I. A.	L.C.L.	4,044
Onkaparinga .....	7,857	7,488	Evans, S. G.	L.C.L.	4,228
Port Pirie .....	6,665	6,367	McKee, D. H.	A.L.P.	4,301
Ridley .....	7,368	7,115	Stott, Hon. T. C.	Ind.	2,824
Rocky River .....	5,548	5,346	Venning, H. M.	L.C.L.	3,671
Stirling .....	7,514	7,235	McAnaney, W. P.	L.C.L.	5,124
Stuart .....	8,848	8,295	Riches, L. G.	A.L.P.	6,002
Victoria .....	7,382	7,057	Rodda, W. A.	L.C.L.	4,439
Walleraro .....	5,834	5,652	Hughes, L. C.	A.L.P.	2,899
Whyalla .....	14,125	12,789	Loveday, Hon. R. R.	A.L.P.	9,268
Yorke Peninsula .....	6,556	6,313	Ferguson, J. R.	L.C.L.	4,651

NOTE : A.L.P.—Australian Labor Party ; L.C.L.—Liberal and Country League ; Ind.—Independent.

*Speaker:* The Hon. T. C. Stott.

*Chairman of Committees:* The Hon. B. H. Teusner.

*Leader of the Opposition:* The Hon. D. A. Dunstan, Q.C.

*Deputy Leader of the Opposition:* J. D. Corcoran.

*Government Whip:* W. A. Rodda.

*Opposition Whip:* G. R. Broomhill.

*Clerk of the House of Assembly:* G. D. Combe.



The members of the Legislative Council and the districts they represent are:

*To Retire in 1971*

Banfield, Hon. D. H. L. . . . .	(A.L.P.)	Central No. 1
Bevan, Hon. S. C. . . . .	(A.L.P.)	Central No. 1
Cooper, Hon. Mrs. J. M. . . . .	(L.C.L.)	Central No. 2
Potter, Hon. F. J. . . . .	(L.C.L.)	Central No. 2
DeGaris, Hon. R. C. . . . .	(L.C.L.)	Southern
Kemp, Hon. H. K. . . . .	(L.C.L.)	Southern
Hart, Hon. L. R. . . . .	(L.C.L.)	Midland
Rowe, Hon. C. D. . . . .	(L.C.L.)	Midland
Geddes, Hon. R. A. . . . .	(L.C.L.)	Northern
Whyte, Hon. A. M. . . . .	(L.C.L.)	Northern

*To Retire in 1974*

Kneebone, Hon. A. F. . . . .	(A.L.P.)	Central No. 1
Shard, Hon. A. J. . . . .	(A.L.P.)	Central No. 1
Hill, Hon. C. M. . . . .	(L.C.L.)	Central No. 2
Rymill, Hon. Sir Arthur . . . .	(L.C.L.)	Central No. 2
Jude, Hon. Sir Norman L. . . .	(L.C.L.)	Southern
Springett, Hon. V. G. . . . .	(L.C.L.)	Southern
Dawkins, Hon. M. B. . . . .	(L.C.L.)	Midland
Story, Hon. C. R. . . . .	(L.C.L.)	Midland
Gilfillan, Hon. G. J. . . . .	(L.C.L.)	Northern
McEwin, Hon. Sir A. Lyell . . .	(L.C.L.)	Northern

*President and Chairman of Committees:* Hon. Sir Lyell McEwin

*Leader of the Opposition:* Hon. A. J. Shard.

*Clerk of the Legislative Council:* I. J. Ball.

### Court of Disputed Returns

In South Australia, provision is made in the Electoral Act, 1929-1965, for the constitution of a Court of Disputed Returns which has jurisdiction to hear and determine all questions of disputed returns affecting either House of the State Parliament which are referred to it by the House concerned. No return on an election writ may be disputed, except by a petition to this Court. A subsidiary function of the Court is to hear petitions for exoneration from liability for failure to file certain electoral returns or vouchers under Part XIV of the Electoral Act.

The Court consists of the Junior Puisne Judge of the Supreme Court, who is the President of the Court, and four members of and elected by the House of Parliament affected by the petition.

The Court sits as an open court, usually at Parliament House, Adelaide and has power, *inter alia*,—

- (a) to compel the attendance of witnesses and the production of documents;
- (b) to examine witnesses upon oath;
- (c) subject to any Supreme Court rules, to regulate the form and mode of its own proceedings;
- (d) to declare that any person who was returned as elected was not duly elected;

- (e) to declare any candidate duly elected who was not returned as elected;
- (f) to declare any election void;
- (g) to dismiss or uphold any petition in whole or in part;
- (h) to award any costs, and
- (i) to punish any contempt of its authority.

Most cases down through the years have related to House of Assembly elections. Since 1857, the Court of Disputed Returns has considered 21 petitions referred to it by the House of Assembly concerning the election of 26 members of that House. The Court's decisions in these cases are summarised hereunder:

Election voided and member unseated . . . . .	15
Member unseated but other candidate declared to be duly elected . . . . .	2
Petitions unsuccessful . . . . .	2
Petitions dismissed . . . . .	6
Petition withdrawn . . . . .	1

In 1968 a petition from Mr. M. B. Cameron (L.C.L.) against the return of Mr. J. D. Corcoran (A.L.P.) as Member for Millicent in the House of Assembly was referred by that House to the Court of Disputed Returns. Mr. Corcoran had defeated Mr. Cameron at the 1968 General Election by one vote. The case before the Court of Disputed Returns extended over five weeks; there were 25 witnesses and the transcript of evidence covered 535 foolscap pages.

Mr. Cameron's petition was that seven postal votes rejected by the Returning Officer should have been admitted—two had been rejected because they had not been signed by an 'authorised witness' and the other five because the Returning Officer was not satisfied that they had been posted prior to the close of the poll. A cross-petition by Mr. Corcoran related to eight votes—three concerning authorised witnessing of postal votes, two the marking of ballot papers, two a duplication of voting, and one the deliberate vote by the Returning Officer despite his entitlement only to a casting vote.

The Court in its judgment admitted three of the votes included in Mr. Cameron's petition and declared invalid four of the votes included in the cross-petition. As these latter four votes were untraceable it found that neither candidate was supported by a sufficient number of qualified votes to establish that he was chosen by a majority of votes validly cast. Also that in any event it was apparent that the invalid vote cast by the Returning Officer would have vitiated the election.

In the circumstances the Court declared that the respondent was not duly elected, the petitioner was not entitled to the seat, and the election was wholly void.

At the by-election held on 22 June 1968 Mr. Corcoran gained an absolute majority of 379 votes over Mr. Cameron and Mr. D. E. Barnes (D.L.P.) and was subsequently elected.

A petition by Mr. A. R. Curren (A.L.P.) against the return of Mr. P. B. Arnold (L.C.L.) to the seat of Chaffey at the 1968 General Election was withdrawn before it could be considered by the Court.

## REFERENDA

Since the inception of responsible government in South Australia in 1856 six referenda have been held—the first in 1896 and subsequent ones in 1898, 1899, 1911, 1915 and 1965—and nine proposals have been submitted.

Three proposals related to education (1896) of which only one was approved; three were constitutional (1898 and 1899)—all approved; one related to Parliamentary salaries (1911)—not approved; one related to bar-room closing hours (1915)—favoured 6 p.m. closing; and one related to the establishment of a lottery (1965)—approved.

The last referendum, held in 1965, approved the question 'Are you in favour of the promotion and conduct of lotteries by the Government of the State?' with 344,886 electors voting 'Yes' and 142,196 electors voting 'No'.

### ADMINISTRATION

The South Australian Public Service consists of fifty-one departments, many of which are very small. The range of functions of most of them was included on pages 59-66 of the *South Australian Year Book* 1966. The departments have been grouped in the following list to indicate the Ministerial control.

#### PREMIER AND MINISTER OF INDUSTRIAL DEVELOPMENT

Hon. Raymond Steele Hall, M.P.

Premier's Department

#### CHIEF SECRETARY, MINISTER OF HEALTH AND MINISTER OF MINES

Hon. Renfrey Curgenvven DeGaris, M.L.C.

Chief Secretary's Department	Prisons Department
Government Reporting Department	Hospitals Department
Auditor-General's Department	Department of the Public Service
Government Printing Department	Board
Police Department	Department of Public Health
Department of the Public Actuary	Department of Mines

#### TREASURER AND MINISTER OF HOUSING

Hon. Glen Gardner Pearson, M.P.

Treasury Department	Agent-General in England Department
Superannuation Department	Valuation Department
State Taxes Department	

#### MINISTER OF LANDS, MINISTER OF REPATRIATION, MINISTER OF IRRIGATION AND MINISTER OF IMMIGRATION AND TOURISM

Hon. David Norman Brookman, M.P.

Lands Department	Botanic Gardens Department
Immigration, Publicity and Tourist	
Bureau Department	

## MINISTER OF AGRICULTURE AND MINISTER OF FORESTS

Hon. Clarence Ross Story, M.L.C.

Minister of Agriculture Department	Produce Department
Agriculture Department	Fisheries and Fauna Conservation
Agricultural College Department	Department
Chemistry Department	Woods and Forests Department

## MINISTER OF WORKS, MINISTER OF MARINE AND MINISTER OF LABOUR AND INDUSTRY

Hon. John William Hurtle Coumbe, M.P.

Minister of Works Department	Public Stores Department
Engineering and Water Supply Department	Department of Marine and Harbors
Public Buildings Department	Department of Labour and Industry

## ATTORNEY-GENERAL, MINISTER OF SOCIAL WELFARE AND MINISTER OF ABORIGINAL AFFAIRS

Hon. Robin Rhodes Millhouse, M.P.

Attorney-General's Department	Local Courts Department
Crown Law Department	Adelaide Magistrates Court Department
Public Trustee Department	Registrar-General of Deeds Department
Department of Social Welfare	Electoral Department
Department of Aboriginal Affairs	
Supreme Court Department	

## MINISTER OF EDUCATION

Hon. Joyce Steele, M.P.

Minister of Education Department	Museum Department
Education Department	Art Gallery Department
Libraries Department	

## MINISTER OF LOCAL GOVERNMENT AND MINISTER OF ROADS AND TRANSPORT

Hon. Charles Murray Hill, M.L.C.

Department of the Minister of Roads	Highways Department
and Transport and Minister of	Motor Vehicles Department
Local Government	

## LEGISLATION

During 1968 sixty-three Public Acts were passed by the State Parliament: fifteen new Acts and forty-eight amendments of existing Acts.

Details of some of the more important legislation passed during this period are given below.

Building Societies Act Amendment Act, 1968 (No. 33) amended the Building Societies Act, 1881-1966 to allow friendly societies to establish building societies.

**Bulk Handling of Grain Act Amendment Act, 1968 (No. 15)** amended the Bulk Handling of Grain Act, 1955-1964 to give South Australian Co-operative Bulk Handling Limited the power to rationalise the acceptance of deliveries of grain to its facilities, to ensure that every producer will get some immediate return for the bulk of his crop.

**Crown Lands Act Amendment Act, 1968 (No. 45)** amended the Crown Lands Act, 1929-1967 to remove the limitations upon the allotment and granting of Crown perpetual leaseholds and to provide a more secure form of tenure for relatively isolated business and residential developments in outback areas.

**Fruit and Plant Protection Act, 1968 (No. 47)** repealed the Vine, Fruit and Vegetable Act, 1885-1959 and empowered the Governor to take appropriate measures to protect fruit and plants in the event of outbreaks of pests and disease.

**Gift Duty Act, 1968 (No. 48).** An Act to provide for the imposition, assessment and collection of a duty on certain gifts.

**Licensing Act Amendment Act, 1968 (No. 49)** amended the Licensing Act, 1967 to allow the granting of wine licences to museums and art galleries in wine-growing districts.

**Licensing Act Amendment Act (No. 3), 1968 (No. 50)** amended the Licensing Act, 1967 to reduce the legal drinking age from twenty-one to twenty.

**Marine Act Amendment Act, 1968 (No. 62)** amended the Marine Act, 1936-1966 to establish a committee to regulate the manning of the coast-trade and river ships.

**Public Examinations Board Act, 1968 (No. 53).** An Act to establish a thirty-two member board entitled 'The Public Examinations Board of South Australia', a statutory body to control public secondary school examinations.

**Railways Standardization Agreement (Cockburn to Broken Hill) Act, 1968 (No. 19).** An Act to approve an agreement between the Commonwealth, the State of New South Wales and the State of South Australia in relation to the construction of a standard gauge railway between Cockburn in South Australia and Broken Hill in New South Wales.

**Stamp Duties Act Amendment Act, 1968 (No. 32)** amended the Stamp Duties Act, 1923-1967 to impose stamp duty on a wide range of receipts.

**State Bank Act Amendment Act, 1968 (No. 13)** amended the State Bank Act, 1925-1958 to require the State Bank to make a contribution to the revenue of the State out of its profits equal to the amount it would be required to pay in income tax if it were not exempt.

**Swine Compensation Act Amendment Act, 1968 (No. 57)** amended the Swine Compensation Act, 1936-1965 to provide \$50,000 out of the Swine Compensation Fund for the Department of Agriculture to establish a research piggery.

**Veterinary Surgeons Act Amendment Act, 1968 (No. 40)** amended the Veterinary Surgeons Act, 1935-1965 to provide for the registration of veterinary surgeons who graduated outside the Commonwealth of Australia.

Wheat Industry Stabilization Act, 1968 (No. 17). An Act relating to the marketing of wheat and the stabilisation of the wheat industry, complementary to the Commonwealth legislation.

Complete details of Acts passed are contained in the volumes of *Acts of the Parliament of South Australia*.

### OVERSEAS REPRESENTATION

South Australia is represented in London by the Agent-General for South Australia, at South Australia House, 50 Strand, London, W.C.2. As official representative of the State, it is the function of the Agent-General to work in close co-operation with the High Commissioner for Australia, to keep the State Government informed of political and economic developments overseas, to promote industrial development and investment in South Australia, to encourage immigration to the State and to foster trade with the United Kingdom and other countries. The present Agent-General is Mr. K. L. Milne.

### INTERSTATE REPRESENTATION

The South Australian Tourist Bureau maintains offices at 390 George Street, Sydney, N.S.W., and at 8 Royal Arcade, Melbourne, Victoria, to foster and facilitate tourist travel to South Australia.

### CONSULAR REPRESENTATIVES

There are twenty-one countries represented in South Australia by consuls, vice-consuls, consular agents, consul-generals or deputy high commissioners.

*Austria*: John A. Nelson, Consul<sup>(a)</sup>

*Belgium*: Robert E. Porter, Consul

*Denmark*: Trevor R. Taylor, Consul

*Dominican Republic*: P. H. D. Lathlean, Consul

*Finland*: Robert N. Irwin, Consul

*France*: F. C. Buttfeld, Consul

*Germany*: Bruce R. Macklin, Consul

*Greece*: Vassile P. Apostol, Consul

*Guatemala*: R. M. Napier, Q.C., Consul

*Italy*: Dr. D. Ferrari, Vice-Consul<sup>(b)</sup>

*Japan*: J. Langdon Parsons, Consul

*Lebanon*: A. M. Hambour, Consul

*Liberia*: W. B. Coombs, Consul

*Netherlands*: E. E. McLaughlin, Q.C., Consul

*Norway*: John N. Howe, Consul

*Peru*: M. J. Hill, Consul

*Philippines*: J. R. Sabine, Consular Agent

*Portugal*: Raymond F. Walters, Vice-Consul

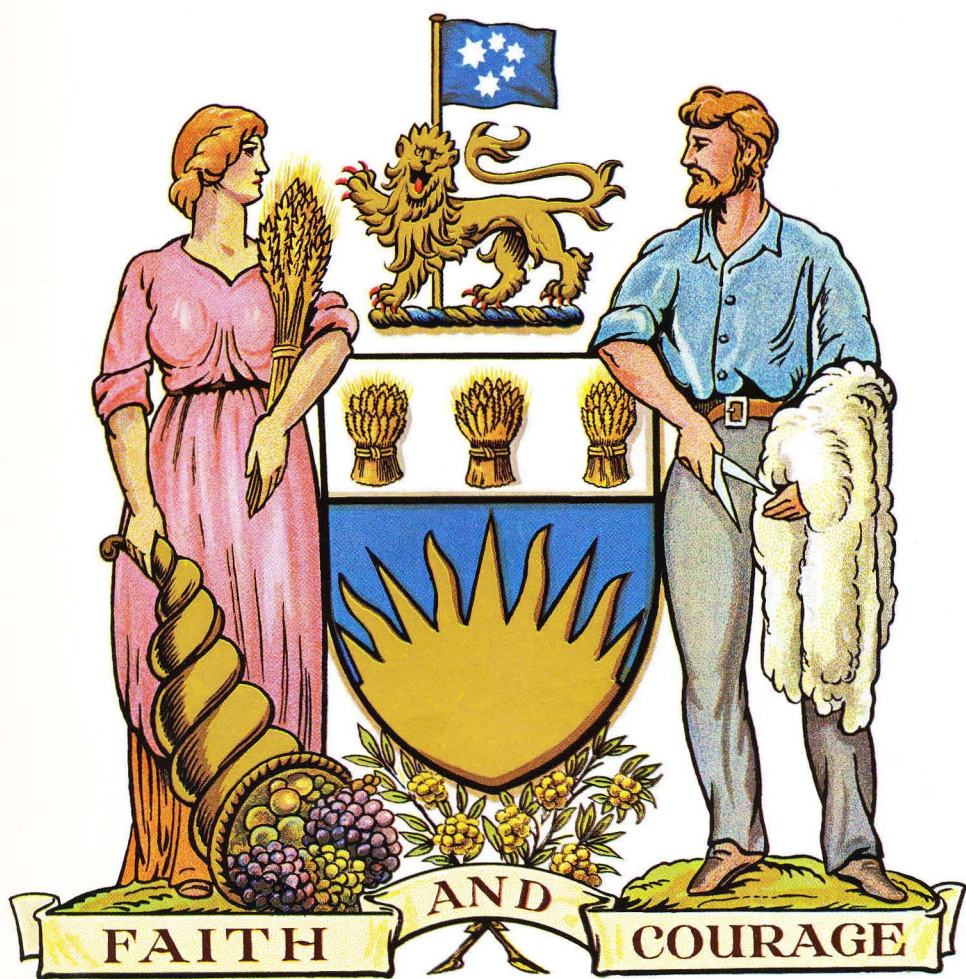
*Sweden*: Mrs. June Tanner, Consul

*United Kingdom*: R. E. Jones, Deputy High Commissioner

*United States of America*: R. D. Geppert, Consul<sup>(b)</sup>

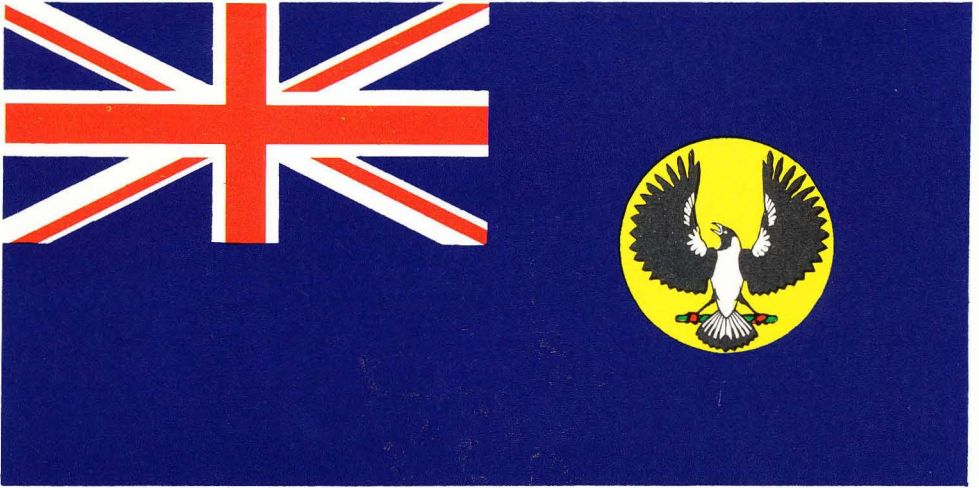
(a) Dean of the Consular Corps

(b) Consul de Carriere



COAT OF ARMS





STATE FLAG



S.A. Govt. Tourist Bureau

FLORAL EMBLEM

## STATE EMBLEMS

**Coat-of-Arms**

Following a request from the Agent-General in London a design for a coat-of-arms for South Australia was received from the Garter King at Arms in 1921 but was regarded as unsatisfactory and not accepted. Early in 1936 as the result of a submission from the Premier of the State to the Governor, the design was resubmitted together with a suggested redesign and a request that the design should be finalised before the State's centenary celebrations in that year. The coat-of-arms was granted on 20 November 1936 and is described as follows, *for Arms, Azure, issuant from the base, a Sun Or a Chief Argent thereon three Garbs proper. And for the Crest, on a Wreath of the Colours, in front of a Staff Or flying therefrom to the sinister a banner Azure charged with five stars, four of seven and one of five points Argent (representing the constellation of the Southern Cross), a Lion passant guardant Gold. And for the Supporters, on the dexter side, a female figure vested holding in the dexter hand a Cornucopia, and in the sinister hand a sheaf of barley all proper, and on the sinister side a farmer holding in the dexter hand a pair of shears and over his sinister arm a fleece of wool all proper, together with the motto 'Faith and Courage'.*

The coat-of-arms is used on State government correspondence and may be used by schools and libraries. Permission for its use must be obtained from the Chief Secretary and is not usually granted for any commercial purposes.

**Badge**

The State badge is described as *the Rising Sun, Or, with thereon an Australian Piping Shrike displayed Proper, and standing on a staff of gumtree raguly, gules and vert.* Its use is also under the jurisdiction of the Chief Secretary and is less restricted than the coat-of-arms.

**Flag**

The State flag which is flown from State government buildings and vessels, was authorised by Proclamation on 13 January 1904 and comprises the Blue Ensign with the State badge in the fly.

**Floral Emblem**

On 23 November 1961 the State government adopted Sturt's Desert Pea (*Clianthus formosus*) as the floral emblem of South Australia. It is found over a great range of inland Australia, thriving in areas where there is less than 15 inches of rainfall per year. Captain Charles Sturt described the finding of the plant in 1854 and it was among the plants collected on the Western Australian coast by William Dampier in 1699.

**3.4 SEMI-GOVERNMENTAL AUTHORITIES**

A semi-governmental authority may be defined as a 'body (other than a local government authority or body whose receipts and payments are included in the public accounts of the Commonwealth, of a State, or of a Territory) created by or under legislation to carry out an activity or activities on behalf of a Government, or a body in which a Government has a controlling interest'.

Some authorities such as marketing boards, which are set up by Acts of Parliament, are not regarded as semi-governmental because their activities are carried out on behalf of industries rather than on behalf of any Government.

Most semi-governmental authorities have independent powers for the recruitment of staff. All possess greater administrative and financial autonomy than Government departments but there is a wide variation in the degree of autonomy accorded, in various aspects, to different authorities.

Activities carried out by semi-governmental authorities include tertiary education, hospitalisation, power supply, public transport, banking services, fire control, irrigation and drainage in rural areas, control and regulation of milk supply, slaughtering of animals for human consumption, housing development, off-course betting and lotteries, and investigation of problems relating to the development of mineral resources.

In appropriate parts of this Year Book some reference is made to the activities of most of the semi-governmental authorities which operate in South Australia.

### 3.5 LOCAL GOVERNMENT

#### LOCAL GOVERNMENT AUTHORITIES

##### Early History

On 19 August 1840, less than four years after the colony was founded, the first Colonial Municipal Act was passed by Governor Gawler and his Executive Council to provide elective municipal institutions for towns of at least 2,000 inhabitants. The franchise was granted to adult males who at the time of enrolment had resided in the province for at least six months and who owned or occupied any land, house, warehouse, counting house, or shop within the area, provided that the property was valued at not less than \$40 per annum and the voter lived within seven miles of the property. At the first elections for Adelaide, held on 31 October 1840, four aldermen and fifteen councillors were elected, forming the first elected local government body in Australia.

This first attempt at local government proved unsuccessful, and in September 1843 the Adelaide Corporation became legally defunct. The Government controlled the affairs of the city for the next six years until 1849, when the Governor appointed five City Commissioners to take over the City Administration.

In October 1851 five hundred ratepayers petitioned for restoration of the Council; in June 1852 the Municipal Corporation of Adelaide was reformed under the Municipal Corporations Act, 1849.

##### Local Government Areas—Number, Size, and Status

At 1 July 1969 there were 138 local government areas in South Australia, each controlled by a council consisting of members elected by local ratepayers and exercising powers under the Local Government Act, 1934-1969.

The total area incorporated in local government areas is 57,856 square miles; this is only slightly above 15 per cent of the total area of the State but contains almost 99 per cent of the State population.

There are two major types of local government areas—district council areas and municipalities. Usually district council areas consist predominantly of rural land but contain one or more towns. Generally, to qualify for proclamation as a municipality an area must be used predominantly for either residential, business, industrial, or manufacturing purposes (or a combination of these purposes), and be able to support itself financially. Some municipalities are constituted as cities, the qualification being a population of 15,000 persons

for metropolitan municipalities (the twenty-one local government areas which form the metropolitan area as defined under the Local Government Act and which, prior to June 1966, corresponded to the statistical metropolitan area) and 10,000 persons in other 'country' areas.

Of the 138 local government areas, 40 are municipalities (including 21 cities) and 98 are district council areas.

The Governor may create, abolish, or vary the size, status, or organisation of, any local government area or portion thereof, provided certain requirements are satisfied. Such alterations usually stem from petition by ratepayers or a council. Four amalgamations, each of two local government areas, have been proclaimed in the first half of 1969 following petitions from the relevant councils.

### Functions of Local Government

The Local Government Act, 1934-1969, prescribes most of the 'powers and authorities' which each council shall or may exercise 'for the good government' and 'the management of the affairs' of its area, but some functions devolve from other Acts. To enable it to sue and be sued and to participate in transactions involving the purchase and sale of land and other property each council is constituted as a corporate body.

The functions performed by councils vary somewhat with the area concerned, but there are general functions which are common to them all. Many of these functions receive more detailed attention in the parts of this book dealing with the appropriate subjects, *e.g.* road construction and maintenance in Part 8.3, Physical Development; health services and Local Boards of Health in Part 6.5, Social Environment, and libraries in Part 6.4, Social Environment. Among the many other functions of local governing authorities are the provision of street lighting, the licensing and inspection of slaughterhouses, the maintenance of cemeteries, the maintenance of foreshores and jetties, the control of the location of industries (especially noisy trades), the prevention of fires within certain areas, and the policing of provisions relating to vermin and weeds.

### Organisation and Representation

Whereas a municipality must be divided into at least two areas known as wards a district council need not have wards. No council may comprise less than five members, and each ward in a municipality must be represented by two councillors. No district council area may be divided into more than ten wards, and the number of councillors for each ward is established by proclamation.

A candidate for election as a councillor must be an adult British subject owning or occupying ratable property within the area for which he seeks election, must not be a special magistrate, an undischarged bankrupt, a person holding contract or employment under the council, under sentence for a crime, overdue with his rates and any associated fines, or of unsound mind.

Each year half the number of councillors retire. In councils with wards one councillor from each ward, the one who has been 'the longest in office without re-election', retires; in other councils the councillors who did not retire one year do so the next. In all cases a retiring councillor is eligible for re-election.

Any municipality may apply to add no less than three and no more than six aldermen to its council. The qualifications for councillors apply to aldermen, except that aldermen are not bound by the limits of wards, and an alderman must have served at least one year as a member of the council. Although the functions of aldermen are not specifically defined the concept is that they should impartially consider the interests of the area as a whole and so resolve any conflict which may arise between sectional interests represented by councillors.

The mayor of a municipality is elected annually on the same basis as an alderman. The chairman of a district council is chosen annually by councillors from among their number.

### **Allowances**

Council members, other than mayor or chairman, are not paid salaries or allowances, but may be reimbursed the cost of travelling to and from council meetings or any expenses incurred in the performance of council business.

The mayor (in the case of a municipality) or the chairman (in the case of a district council) receives an annual allowance which is determined at a council meeting in July of each year. This allowance payable in advance, is to compensate for any expenses he is likely to incur in the execution of his official duty in the current financial year.

### **Franchise**

Adult British subjects who either own or occupy ratable property within an area are eligible to be enrolled for, and to vote at, elections for that area provided that they are not in arrears with their rates. Companies or corporations owning or occupying ratable property within the area are entitled to nominate up to three persons to vote on their behalf at the elections for that area, depending on the method of valuation; the entitlement is for the nomination of one vote for each \$300 of annual (improved) value or \$2,000 of unimproved (land) value or part of either, up to three voters for any one property. Special provision is also made to allow certain defence personnel to vote.

### **Officers and their Functions**

Each council may appoint any officers it considers necessary to carry out its duties, including special constables to facilitate the maintenance of law and order within its area.

Each council must appoint a town clerk (in a municipality) or a district clerk (in a district council) as the chief administrative officer, and an auditor.

Employment in local government administration is now regarded as a career; most town and district clerks are full-time employees, and councils are required to employ in those positions only those persons who have passed examinations qualifying them for the work. The town or district clerk maintains the voters roll and in many cases is appointed returning officer for elections. The characteristics of particular areas determine to some extent the nature of the duties performed by town and district clerks; they often undertake a very wide variety of functions, especially in smaller areas, where even the part-time employment of specialist officers for particular tasks is not warranted.

The auditor for each council is appointed for a term of two years. He is not eligible for appointment unless he holds a Local Government Auditor's Certificate of competence issued by the Local Government Auditors Examining Committee.

Whenever a council itself undertakes a new assessment of property values within its area it is required under the Local Government Act to appoint a valuator who recommends to the council a valuation of each property for rating purposes. A ratepayer may appeal against a council's valuation of his own property or that of another ratepayer. Instead of undertaking its own assessment of property values it is now not uncommon for a council to adopt the valuations of the Valuation Department. When this is done a council avoids the necessity for employing a valuer but a fee for each valuation is payable to the Valuation

Department. There is no right of appeal to the council against valuations so based, the right of appeal lying against the department when the valuation is made.

### Finance

Local government authorities derive their revenue from many different sources, including sundry licences and fines, but the principal sources are rates, loans raised against the security of future rates, and Government grants. The relative importance of these sources of revenue varies between areas and through time within areas, *e.g.* in closely settled well developed areas rate revenue is usually predominant; in large sparsely settled areas Government grants, mainly for road works, may at times be the chief item of revenue; in areas being rapidly and extensively developed for housing or industrial purposes both Government grants and loan funds may be prominent.

Commonwealth Government grants are not made direct to local government authorities but are administered by appropriate State Government departments. The most important example of this is the distribution of portion of Commonwealth Aid Roads Grants to local government authorities by the Highways Department in conjunction with the State Treasury.

A large proportion of local government expenditure from both loan funds and other revenue is for the construction and maintenance of roads, footpaths, and stormwater drains.

More detailed attention is given to local government finance in Part 12.5.

## TOWN AND REGIONAL PLANNING

South Australian Parliament in 1920 passed the Town Planning and Development Act which followed the Control of Subdivision of Land Act of 1917. These Acts were the first of their kind in Australia. The Act of 1920 made provision for the preparation of town planning schemes and by-laws, for the appointment of a Government Town Planner and a Town Planning Department. Before the repeal of both Acts by the Town Planning Act, 1929, which dealt only with the control of land subdivision, the Town Planning Department prepared plans for various areas, including Colonel Light Gardens and the townships of Iron Knob and Barmera.

The Town Planning Act, 1929 was amended in 1955 to provide for a Town Planning Committee which was required to prepare a plan to guide the future development of the Metropolitan Area of Adelaide. The Committee considered the probable future population of the metropolitan area, the provision of public transport, adequacy of highways, provision of open spaces such as parks and sports grounds, the zoning of industrial districts, and the subdivision of land in relation to the economic provision of sewerage, water supply, electricity and gas services.

The Metropolitan Development Plan and its accompanying Report on the Metropolitan Area of Adelaide, were laid before both Houses of Parliament in October 1962, and an amendment to the Town Planning Act followed in 1963. The amendment required the Committee to call for and consider objections to the Plan as submitted to Parliament and the Committee was authorised to make regulations to implement the Plan.

The Planning and Development Act, 1966-1967 repealed the Town Planning Act, 1929-1963. It established an eleven-member State Planning Authority (with a Director of Planning as Chairman) and an independent Planning Appeal Board of four members. Provisions were made for the Planning Authority, through the State Planning Office, to implement and review the 1962 Development Plan,

to prepare similar plans for other parts of the State and in conjunction with local government authorities to determine broad policies to guide the growth of towns and cities throughout the State. The Planning Appeal Board hears appeals against decisions of the Director of Planning, the State Planning Authority or local government authorities.

Control of development in accordance with a development plan is by regulation and the Authority or the appropriate local government body can recommend to the Minister that regulations be made. Such regulations may, for example, deal with the zoning of industrial, commercial or residential areas. The regulations must be exhibited publicly and opportunity given for objections to be lodged, before being submitted to the Minister. Any person aggrieved by a decision given under a regulation may appeal to the Planning Appeal Board with a subsequent right of appeal to the Supreme Court.

The Authority is empowered to buy land either by agreement or compulsorily to assist in promoting development in accordance with a development plan and a Planning and Development Fund exists in the Treasury to assist the Authority in carrying out this function.

The control of land subdivision throughout the State, with the exception of the City of Adelaide, is vested in the Director of Planning and the local government authority in the area in which the land is situated. If permission to subdivide is refused, there is a right of appeal to the Planning Appeal Board.

The Minister of Local Government is responsible for the administration of the Planning and Development Act. The Director of Planning heads the State Planning Office, which forms part of the Department of the Minister of Roads and Transport and Minister of Local Government.



## **PART 4**

# **LAND SETTLEMENT**

## **4.1 LAND TENURE**

### **IDENTIFICATION OF LAND AND REGISTRATION OF TITLE**

To facilitate the identification of land, the southern portion of the State encompassing all the arable land and certain pastoral areas has been subdivided into counties, these in turn being generally subdivided into smaller units known as hundreds.

The first Surveyor-General, Colonel Light, had been instructed by the Colonisation Commissioners to divide the colony into towns and counties, and in 1842 the first nine counties were proclaimed. At the same time the administration was having considerable difficulty in regulating the leasing of unsold lands for pasturage. To assist it was proposed in 1846 that boundaries of areas smaller than counties be created and the system of hundreds in use in some counties in England was adopted.

The boundaries of early counties and hundreds followed natural features. As further counties and hundreds were declared, natural features suitable for boundary delineation were not always available and in most cases the boundaries were set parallel to lines of longitude and latitude.

In 1887 an area of 250,000 acres was declared to provide for the town and irrigation area of Renmark on the River Murray. Similar areas were subsequently surveyed and proclaimed adjacent to other sections of the river.

There are currently forty-nine counties covering 23 per cent of the State, the last of these being declared in 1933. The counties have an average size of 1,143,000 acres, varying from County Light, north of Adelaide, with 536,960 acres to County Jervois on Eyre Peninsula with 2,368,000 acres.

Counties are generally subdivided into hundreds, although four northern counties remain undivided and a number of others are only partly subdivided. There is considerable variation in the size of hundreds, while the number of hundreds

in a completely subdivided county varies from eight in Counties Alfred and Kintore to thirty-four in County Jervois. New hundreds are created from time to time, the present total being 532.

Hundreds are further subdivided into sections which in turn may be divided into allotments or occasionally blocks.

Land is therefore, for the purposes of title generally identified by the county, hundred, and section, and where appropriate block or allotment within which it falls. Land in towns and in proclaimed irrigation areas may further be identified as falling within that town or area.

### **Torrens System of Land Registration**

Land transactions in South Australia are conducted under the Torrens System of land registration as provided by the Real Property Act, 1886-1967. This system, first introduced by the Real Property Act, 1858, was named after its author, Sir Robert Torrens, who was at that time Registrar-General of the colony.

All land transactions to this date had been conducted by the conveyancing of the general law titles, a procedure which was cumbersome, costly and uncertain, and particularly unsuited to a fledgling colony with a large number of landowners and where land transactions were frequent.

Torrens had previously been Collector of Customs and in this role had been impressed by the relatively simple principles involved in the transfer of shipping property, principles which he argued could be applied to land transactions. His proposals were to lead to similar legislation in the other Australian States, and have subsequently been adopted in other parts of the world.

The Torrens System provides that the matter of title to land shall be a government responsibility. Each piece of land is represented by a certificate of title which, with very few (and in practice unimportant) exceptions, is guaranteed by the State. Retrospective examination which is necessary with general law title is eliminated and the costs and time involved in conveyancing can thus be kept to a minimum.

The Real Property (Registration of Titles) Act, 1945, provided for the small proportion of land then remaining under the general law to be converted to the Torrens System. This transition is still in progress in certain areas.

The table below shows details, extracted from records at the Lands Titles Registration Office, of sales of real estate during the five years to 1968.

**Sales of Real Estate, South Australia**

Year	Number of Sales	Consideration
		\$'000
1964.....	34,066	261,410
1965.....	32,758	259,828
1966.....	31,375	258,308
1967.....	30,492	259,178
1968.....	29,083	266,408

## SYSTEMS OF TENURE

## HISTORICAL

The sale of Crown land played an important role in the establishment of South Australia. At the time of the first settlement the 'Wakefield System' of colonisation was held in favour and it was thus planned that the new colony be largely self-supporting with revenue coming from the sale of land. This proposal was agreed to, with the proviso that land to the value of \$70,000 be sold in England prior to settlement. After considerable difficulty 60,595 acres were disposed of for \$72,714. Early applications for land were made by tendering at a fixed price and 323,000 acres of land had been thus disposed of by 1843 when sales by auction were introduced. By 1857, 1,756,000 acres had been alienated at an average price of \$2.52 per acre. In 1846, under the Waste Lands Act, land outside the hundreds was leased for pastoral purposes for periods up to fourteen years, and leases within the hundreds date from 1850. The term of these leases was extended to twenty-one years in 1864 and to forty-two years in 1890.

Land sales prior to 1869, involving 3,790,185 acres at a total purchase price of \$8,963,612, were conducted on a cash basis. However, in that year sales on credit were introduced, with payments initially spread over four years and later extended to twenty years. Land not sold at auctions was offered on twenty-one year leases, and in the late 1880s leases with a right to purchase and leases in perpetuity were introduced. From 1886 gold, and from 1888 other metals and minerals, in lands sold by the Government were reserved to the Crown. Perpetual leases were first introduced in 1888. Early leases provided for a revaluation of rents every fourteen years, but in 1893 provision was made for rents to be fixed in perpetuity.

The introduction of the current system of allotting lands in preference to sales by auction led to the appointment of the Land Board in 1886 and the Pastoral Board in 1893. The principles of closer settlement whereby the Crown repurchases and subdivides suitable lands, were introduced in 1897.

With the introduction in 1903 of agreement to purchase—a form of tenure leading to freehold—the present day pattern of tenure was completed. Subsequent legislation has been devoted to variations in the basic concepts of freehold, agreement to purchase, perpetual lease, pastoral lease and miscellaneous lease.

## LAND ADMINISTRATION

Approximately 90 per cent of the occupied area of South Australia comprises Crown land held under lease and as such is controlled by the Department of Lands. This department is charged with the general administration of Crown lands, and with making available under appropriate tenure newly developed lands and such lands as come into the hands of the Crown by resumption, expiry, surrender or forfeiture of existing tenure. The consent of the Minister of Lands (or the Minister of Irrigation in the case of irrigated lands) is required prior to the transfer, mortgage or sublease of any of the forms of tenure administered by the department.

Land available for leasing is allotted by the Land Board and, in the case of pastoral lands, by the Pastoral Board, who interview applicants and make allotments on merit. The Boards also advise the Minister on matters connected with land settlement.

Leases and licences under the various mining Acts are issued and supervised by the Department of Mines, while the Woods and Forests Department and the Engineering and Water Supply Department are responsible for the issuing of leases over reserves and areas under their control.

## CURRENT TENURE

In the table below, occupied land in South Australia is classified according to its present form of tenure. Thus 'Areas sold, dedicated etc.' do not represent the accumulated total of all alienated lands, as certain alienated lands repurchased by the Crown are currently held under leases.

At 30 June 1968 land in South Australia was occupied as follows:

	Area	Proportion
	Acres	%
Area sold, dedicated, etc.:		
Sold . . . . .	15,025,345	6.18
Free grants . . . . .	916,654	0.37
Dedicated (a) . . . . .	290,786	0.12
Under agreement to purchase . . . . .	309,873	0.13
Total . . . . .	16,542,658	6.80
Area under lease and licence (b):		
Perpetual . . . . .	20,787,059	8.55
Pastoral . . . . .	127,269,267	52.32
Other . . . . .	1,473,630	0.60
Total . . . . .	149,529,956	61.47
Area in occupation . . . . .	166,072,614	68.27
Remainder of State:		
Lakes and lagoons . . . . .	7,904,800	3.25
Open for allotment or selection . . . . .	7,574	0.01
Other vacant land (c) . . . . .	69,259,812	28.47
Total area of State . . . . .	243,244,800	100.00

(a) Includes State forest reserves.

(b) Includes areas held under Mining Acts.

(c) Includes surveyed roads, railways and other reserves, 22,919,170 acres of which 18,833,822 acres are set apart as Aboriginal reserves.

In 1901 the area sold, granted and leased, *i.e.* the area occupied, was 93,666,052 acres, increasing to 141,907,525 in 1924, but falling to 129,411,612 in 1931 due to decreased areas under pastoral lease. Since 1931 there has been a fairly steady increase to the present figure of 166,072,614 acres.

## METHODS OF ALIENATING LAND

## Sales under Agreement to Purchase

There is provision for Crown lands to be alienated through an agreement to purchase although this method is not used to any great extent at present.

The purchase money is payable over varying terms not exceeding sixty-four years and the purchaser must comply with certain special conditions concerning the improvement and the development of the land, including the fencing of the property within the first five years. It is not necessary for an agreement to run the full term as, subject to the Minister's approval, purchase may be completed after six years provided all such conditions have been complied with. When allotting land, preference is given to the applicant who agrees to reside on the land. No land may be allotted under an agreement to purchase where the resultant total holdings would exceed \$25,000 in unimproved value, or if

used for pastoral purposes, where the carrying capacity exceeds 5,000 sheep (10,000 sheep outside certain areas scheduled in the Crown Lands Act). Existing agreements may, however, be transferred up to a maximum holding of \$36,000 unimproved value or, except in certain areas, 4,000 acres. Land allotted under Agreements to Purchase amounted to 2,411 acres in 1967-68.

### **Sales at Auction**

Certain Crown lands may be sold at auction for cash. These include town lands, suburban lands exempt from the operations of the Land Board, and Crown lands which have been offered for lease and not taken up within two years. Town lands so sold are subject to limitations on resale and conveyance through mortgage during the first six years, and it is usually conditional that improvements, for an agreed function and of a certain minimum value, be erected within a stipulated period.

### **Free Grants and Reservations**

A free grant of Crown lands may be made for any public purpose. Of the 916,654 acres thus alienated at 30 June 1968, 768,000 acres had been granted for the Weapons Research Establishment. Lands may also be dedicated and reserved for a variety of purposes such as forest areas, Aboriginal reserves, wild life reserves, parklands, schools and defence establishments.

## **METHODS OF LEASING AND LICENSING LAND**

### **Leases for Limited Terms**

Pastoral lands outside the counties and large areas in the northern counties are held under pastoral leases granted for terms of forty-two years (except in the case of previously unoccupied lands when the term is twenty-one years). Under the conditions of these leases the lessee must expend in improvements a sum as recommended by the Pastoral Board and must comply with certain conditions on stocking. Rent is based on the unimproved value of the land and in the case of a forty-two year lease is revalued every seven years. Such lands may be reallocated to the same lessees on expiry of the existing terms.

Persons may be granted a permit to search for water and if successful may take up a lease of 100 square miles of land. Such leases are granted for forty-two years at a nominal rental for the first ten years and a low rental thereafter. Conditions of stocking are also modified.

In certain circumstances, such as where land has not been surveyed or its potential is uncertain, or where permanent alienation is not desirable, miscellaneous leases are issued for periods up to twenty-one years. Certain business and industrial sites may also be held under miscellaneous lease. Annual licences may be granted over Crown lands for certain industrial sites, grazing areas, fishermen's residences, holiday shack sites and other approved purposes.

Land reserved for the Woods and Forest Department may be leased for cultivation or grazing purposes for a period not exceeding forty-two years. At 30 June 1968, approximately 7,000 acres of forest land were under lease.

### **Perpetual Leases**

Leases in perpetuity may be offered over Crown lands which have been surveyed. The lessee is required to provide boundary fencing and to clear and render available for cultivation a certain proportion of the land within a specified period. Where considered desirable it is conditional that the lessee reside on the property.

No lease may be allotted which would bring the unimproved value of total holdings in excess of \$25,000 except where the land is suitable for pastoral purposes only. Existing leases may, however, be transferred to a landowner up to an accumulated holding of \$36,000 unimproved value or, except in certain areas, 4,000 acres. In certain cases special perpetual leases are available under which no rent is payable for the first four years, and with less than full rent over the next six years.

Sections in government controlled irrigation areas are offered on perpetual lease and, if the land has not been cultivated before, rents and water rates are payable on a sliding scale for the first three years. Certain improvements are to be made and the lessee may be required to reside on the land for nine months of the year. Town allotments in irrigation areas may be offered under perpetual lease either at auction, by calling applications, or may be let on annual licence. Allotments not sold at auction may be sold by private contract.

During 1967-68, 515 acres in irrigation areas were allotted under perpetual leases.

### MINING CLAIMS, LEASES AND LICENCES

#### Mineral Lands

Mineral lands are lands in which the mineral rights are reserved to the Crown and include Crown lands, lands under Crown lease and lands alienated from the Crown after 1886. Mineral lands which are used as a site for buildings, dams, etc., or which are cultivated, are exempt from mining as are certain areas which may be exempted either permanently—as with Aboriginal reserves—or temporarily, e.g. to facilitate a Department of Mines survey. Public reserves, streets and highways are subject to regulations protecting the public user.

A current miner's right (which forms the basis of all operations under the Mining Act) must be held by every independent prospector, and authorises the holder to prospect for any metal, mineral, precious stones, salt, gypsum or coal on mineral lands. A miner's right does not of itself confer the right to enter on private lands. The prospector may acquire a claim carrying with it the right of possession of minerals found, (with the exception of salt and gypsum which cannot be worked until a lease has been obtained). Claims are issued with a tenure of one year only and are designed to enable the holder to prove the deposit before applying for a long term lease. Claims may be renewed at the expiration of each year of tenure.

The holder of a claim (other than an alluvial gold claim or a precious stones claim) may be required to take a lease of his claim, if at any time payable results are achieved. In the case of salt and gypsum, application for a lease must be made within twenty-one days of acquiring a claim. A lease (other than a Special Mining Lease) may be for any term up to twenty-one years. The maximum size of claims and leases and of working conditions imposed, vary with the nature of the mineral.

An annual rental, and a royalty on gross profits are payable by the lessee to the Crown. Special Mining Leases may be granted for a term of up to two years, under terms and for an area fixed by the Governor. These are for exploration only.

Petroleum and natural gas, whether on mineral lands or not, are the property of the Crown. Exploration for, and production of, petroleum and natural gas is controlled by the Petroleum Act 1940-1967 by virtue of the appropriate form of licence. A petroleum exploration licence is granted for a term of five years for an area not exceeding 10,000 square miles.

A petroleum production licence is granted for a term of twenty-one years, with a maximum area of 100 square miles, and provides for a royalty of 10 per cent of the value at the well-head of all petroleum recovered from the land comprising the licence.

#### Lands with Mineral Rights Alienated

The mineral rights of lands sold by the Crown prior to 1886 were alienated with the land.

The prospecting and mining of such land may be carried out either under a private agreement with the owner or under authorisation of a warden of the Department of Mines. Where a lease is issued by the department, the bulk of any rents and royalties collected is paid to the owner.

At the discretion of the Government certain lands may be reserved from mining operations, and other lands are exempted by the nature of their use.

#### Areas Held under Mining Acts, South Australia

At 30 June

Particulars	1964	1965	1966	1967	1968
			Acres		
Claims .....	12,483	14,298	16,190	17,169	16,597
Leases .....	7,881,612	6,606,993	29,621,476	15,489,944 (a)	14,502,782
Oil licences .....	228,234,240	221,059,840	237,591,040	240,791,040	207,260,160

(a) Lands held under Special Mining Leases accounted for 14,422,400 acres of land occupied under lease at 30 June 1968.

Mineral royalties received by the Department of Mines during 1967-68 amounted to \$1,037,000.

## 4.2 LAND SETTLEMENT SCHEMES

### CLOSER SETTLEMENT

There is provision in the Crown Lands Act for acquisition of land for subdivision in the interests of closer settlement. Such land is divided into blocks not exceeding \$14,000 in unimproved value, and offered under conditional agreements to purchase with payment over thirty-five and sixty-four year periods.

No land has been purchased for closer settlement since 1952-53, by which time 948,885 acres had been purchased at a cost of \$5,730,400, including 51,872 acres set apart for returned service personnel from the 1914-18 War, 3,214 acres for forest and water conservation purposes and 26,563 acres purchased in connection with the reclamation of River Murray swamp lands.

At 30 June 1968 a total of 188,306 acres of closer settlement lands were held under agreements to purchase or lease.

### MARGINAL LANDS SCHEME

The excessive opening up of the drier marginal lands for wheat growing resulted in many settlers in these areas being forced to leave their holdings, particularly in the 1930s.

Investigations showed that if the settlers were to succeed, cereal growing would need to be replaced by grazing, and in 1939 the Commonwealth Government established a trust fund to assist development in this direction. The money was



used to purchase properties from certain settlers with a view to enlarging the holdings of others, to provide fencing and water supplies and to pay small grants to settlers vacating holdings in which there was no equity. Commonwealth grants totalled \$1,426,000, all of which has been expended.

### CROWN LANDS DEVELOPMENT

The Crown Lands Development Act, 1943, administered by the Department of Lands, provides for the development of Crown lands, or lands which the department may purchase, and for the allotment of such lands to suitable settlers.

A substantial proportion of the land under the Act was developed with the object of inclusion in the War Service Land Settlement Scheme. Properties not accepted for the scheme were subsequently allotted under the Act, and since then a number of individual properties have been surrendered to the Crown for development and re-allotment to the former holders.

### ASSISTANCE FOR RETURNED SERVICE PERSONNEL

#### 1914-18 War

Following the 1914-18 War the State Minister for Repatriation was authorised to acquire land for the purpose of re-settling discharged servicemen. Such land could be purchased by agreement or acquired compulsorily, whether held in fee simple or under Crown lease. Crown lands could also be set apart for this purpose. The land acquired was subdivided where appropriate and offered under agreement to purchase, perpetual lease or a term lease. Provision was also made for the discharging of existing mortgages on freehold properties already held by ex-servicemen, with fresh mortgages in favour of the Minister of Repatriation.

In all 3,801 ex-servicemen were settled under this Act with 3,008 settling in 'dry lands' and 793 in irrigation areas.

#### 1939-45 War and Korea-Malaya Operations

##### *War Service Land Settlement*

Under the War Service Land Settlement Scheme, provision was made for the settlement on rural holdings of certain ex-servicemen from the 1939-45 War and Korea and Malaya operations.

Suitable Crown land was made available and other land was acquired. This land was subdivided and developed to a stage where it could be brought into production by the individual settler within a reasonable time. Basic structural improvements were provided and it was then offered to eligible settlers on perpetual lease. Credit facilities are available to these settlers for working capital, the purchase of stock and equipment, and the effecting of further improvements.

During the first year after allotment in the case of 'dry lands' settlers, and the first year after an irrigation holding became self-supporting the settler was granted a living allowance and was exempted from the payment of rent or interest in respect of the holding, and of payments on account of principal or interest in respect of advances, other than advances for working capital. Provisions exist for a settler on 'dry lands' to convert property to freehold after a period of ten years by the payment of a fixed purchase price and the repayment of all advances. There is no provision for freeholding in government irrigation areas.

The State Department of Lands administers the War Service Land Settlement Scheme on behalf of the Commonwealth Government. The Commonwealth provides the funds and meets the costs of the scheme with the exception of administration costs and two-fifths of any losses, which sums are met by the State Government.

All large scale development operations under the scheme have now been completed. The principal areas settled are in the South East, on Kangaroo Island, Eyre Peninsula, and in irrigation areas along the River Murray.

The following table shows for selected years the number of farms allotted and total expenditure under the War Service Land Settlement Scheme.

**War Service Land Settlement, South Australia**  
*Farms Allotted and Total Expenditure to 30 June*

Particulars	1953	1956	1959	1962	1965	1968
<b>Farms allotted:</b>						
Number .....	517	718	984	1,015	1,022	1,032
Area ('000 acres) .....	219	343	623	671	688	704
	\$'000					
<b>Expenditure:</b>						
State .....	<i>n.a.</i>	<i>n.a.</i>	3,310	4,742	6,612	7,064
Commonwealth;						
Acquisition of land .....	3,934	4,768	6,358	6,914	6,836	6,837
Development and improvement of land .....	13,512	19,872	25,414	28,214	29,748	30,336
Provision of credit facilities	2,620	4,982	8,690	18,852	27,008	33,218
Other .....	640	1,668	3,634	6,472	9,454	10,540
<b>Total expenditure by Commonwealth</b>	20,706	31,290	44,096	60,452	73,046	80,931
<b>Total expenditure ....</b>	<i>n.a.</i>	<i>n.a.</i>	47,406	65,194	79,658	87,995

*n.a.*—Not available.

#### *Loans and Allowances (Agricultural Occupations) Scheme*

The Commonwealth Government through the State Bank of South Australia provided financial assistance for the establishment or re-establishment of ex-servicemen in agricultural occupations. Loans were made for a variety of purposes and non-repayable allowances were made where income during the course of re-establishment proved to be inadequate. The payment of allowances and the advancing of new loans ceased in 1956-57 by which date loans totalling \$2,009,096 had been made to 1,288 ex-servicemen, and allowances totalling \$649,218 had been granted to 2,264 ex-servicemen.

An additional Marginal Lands Improvement Fund was established in 1943 from which expenditure of \$416,381 had been made by 30 June 1968 by the Department of Lands.

#### PRIVATE LAND DEVELOPMENT SCHEMES

The most important private scheme in South Australia has been a project, begun in 1949 by the Australian Mutual Provident Society, involving the development of a considerable area of land in the south-east of the State in what was previously known as the Ninety Mile Desert. The development of this area was made possible by the discovery that the retarded nature of the country was due to certain soil deficiencies, and that these deficiencies could be overcome by the addition of trace elements (mainly copper sulphate and zinc sulphate) to the soil.

Large tracts of unimproved land were obtained either by purchasing existing leases or by Crown allotment. Intending settlers were employed by the society in the development work, covering a period of approximately five years, and were then allotted a holding over which they had a perpetual lease title. The society provided finance for the purchase and for stock, plant and working expenses. In all 96,000 acres were taken up by employees of the society.

In addition to the development of land for employees a large area was handed to various stages of development and sold to the public, sales in this category amounting to 327,000 acres.

### ADVANCES TO THE RURAL SECTOR

#### Government Advances

In addition to advances made under schemes mentioned above, the State Bank administers certain funds provided by the State for rural development.

Under the Advances to Settlers Act, 1930-1968 the bank makes advances to settlers for a variety of purposes including general improvements, the purchase of livestock and the discharging of existing mortgages. The Loans to Producers Act, 1927-1962 empowers the bank to make advances for certain developmental projects and the purchase of certain capital equipment. The bank also administers Acts providing loans for the construction of vermin-proof fencing, general fencing and the laying of water piping.

Advances outstanding at 30 June for the four most recent years are shown in the following table.

Advances to Settlers, South Australia

Particulars	1965	1966	1967	1968
	\$'000			
Department of Lands:				
Closer settlement .....	398	366	344	295
Soldier settlers (1914-18 War) .....	641	580	520	477
Returned service personnel (1939-45 War) .....	12,816	12,749	12,341	12,309
Crown lands development .....	730	716	701	689
State Bank of South Australia:				
Advances to settlers .....	1,092	1,177	1,197	1,231
Loans to producers .....	6,899	7,768	8,087	8,398
Vermin and fencing advances .....	78	77	67	59
Total .....	22,654	23,433	23,257	23,458

#### Private Institutional Advances

Many financial institutions advance funds for rural development.

At January 1968 the major trading banks (including the Commonwealth Bank) had advances outstanding to residents of South Australia and the Northern Territory, employed in agriculture, dairying and grazing, of \$65.0 million. At January 1968 branches of major pastoral finance companies located in South Australia had \$53.4 million outstanding on similar advances.

## **PART 5**

# **POPULATION**

## **5.1 THE CENSUS**

### **PRE-FEDERATION ACTIVITY**

#### **Early 'musters'**

Population returns in one form or another have existed from a very early period in the history of Australia. The earliest enumerations were known as 'musters', and although the actual results of very few of them have been preserved, it is probable that during the early days of colonisation they were of frequent occurrence. The first official 'muster' was taken in 1788 soon after the new settlement at Sydney Cove was formed, and in 1803 the first 'muster' of convicts in Van Diemen's Land (now Tasmania) was conducted.

#### **Development of the census**

The first regular census in Australia was taken in New South Wales in November 1828, and included the population of Moreton Bay (now Queensland) but not Van Diemen's Land (Tasmania). Details of the names, ages and civil conditions of the inhabitants were sought. The next census was taken in 1833, and was followed by another in 1836, when arrangements were made for the enumeration of the population of the newly-established settlement at Port Phillip (Victoria). The first censuses taken in Tasmania, Victoria and Queensland as separate colonies were in 1841, 1854 and 1861 respectively. The first regular census in South Australia was taken in 1844 and in Western Australia in 1848. The 1881 census was the first simultaneous census taken in Australia and formed part of the first simultaneous census of the British Empire.

### **CENSUSES OF THE COMMONWEALTH**

Under the Commonwealth of Australia Constitution Act of 1900, 'Census and Statistics' became Commonwealth functions. Provision for census-taking under Commonwealth law was not made until the *Census and Statistics Act 1905*. The

census of the Commonwealth of Australia is taken under the authority of this Act (now *Census and Statistics Act 1905-1966*) and the regulations made thereunder. The first Australian census collected under the Act was that of 1911; subsequent censuses were taken in the years 1921, 1933, 1947, 1954, 1961, and 1966. The Act provided that the census should be taken by means of a householder's schedule delivered to every dwelling and that this schedule should contain particulars of the dwelling and its inmates.

### Periodicity and date of the census

The *Census and Statistics Act 1905* provided that the Census should be taken 'in the year one thousand nine hundred and eleven and in every tenth year thereafter'. But in 1930 this was amended by the addition of the words 'or at such other time as is prescribed'. Because of the economic depression prevailing in 1931 the third Australian census was not taken until 1933, and because of war conditions the fourth Australian census was not taken until 1947. Consideration was then given to the practicability of holding future censuses in the series of years originally envisaged. However, it was considered that the interval of years from 1947 to 1951 was too short; therefore it was decided to take the fifth census in 1954 at the mid-point of the period from 1947 to 1961. The sixth census was held in 1961. Because of the administrative demand for more frequent counts of the population the seventh census was held in 1966.

The Census and Statistics Act provides that 'the Census day shall be a day appointed for that purpose by proclamation', but the actual date is not specified. The census is conducted on a strictly *de facto* basis, i.e. it records the population actually in Australia at the place where located on census day (as distinct from a *de jure* basis, which records the population according to place of usual residence). In the selection of census day every endeavour is made to choose a date when there is a minimum displacement of population. In 1911 and 1921, census day was near the beginning of April, but in 1933 and subsequently, census day has been at or near the end of June because this time has fulfilled the condition mentioned and is otherwise suitable, being the end of a fiscal year and of a quarterly period used extensively for statistical purposes.

### Scope of the census

The census covers the population of the Commonwealth and the dwellings in which it lives.

Until 1967 the only persons excluded from Census results were:

- (i) diplomatic representatives of other Governments and their families and staffs having diplomatic immunity in accordance with international practice;
- (ii) full-blood Aborigines, pursuant to Section 127 of the Constitution which specifically excluded them from the count of the population.

However, following the results of a Commonwealth referendum held in 1967, Section 127 of the Constitution was repealed and in future censuses, full-blood Aborigines will be included.

Broadly the principle is to record at the census babies born at or before midnight of census day and to exclude persons dying before midnight of census day. Travellers on ships in or between Australian ports at midnight of census day are also included.

For census purposes the Act defines a dwelling thus: "Dwelling" means a building, erection, or tenement, whether permanent or temporary, which is wholly

or partly used for the purpose of human habitation and includes any ship or other vessel in any port of the Commonwealth or in any inland waters thereof, or any ship or vessel on a passage between any two Commonwealth ports'. Section 10 (2) provides that 'where a building is let, sub-let or held in different apartments and occupied by different persons or families, each part so let, sub-let, or held and used for the purpose of human habitation shall be deemed a dwelling'.

Measurable characteristics such as 'class' of dwelling, materials of outer walls, number of inmates in relation to number of rooms, facilities and rentals are recorded.

The census data on occupied dwellings are obtainable from the completed householder's schedules. However, census collectors are responsible for recording, from personal observations or inquiry, particulars also of dwellings which are unoccupied on census day, including those temporarily unoccupied or those used for 'holiday purposes'. Dwellings not recorded at the census are those occupied by accredited persons having diplomatic immunity and prior to 1967 dwellings occupied solely by full-blood Aborigines.

The provisions of the Act place the responsibility for completing a householder's schedule upon the 'occupier of a dwelling'. The term 'occupier' is not defined beyond specifying certain officials in charge of public or charitable institutions who are to be included under this head. In practice, the responsibility, in the case of all private dwellings, is considered to rest with the head of the household occupying the dwelling.

#### **Commonwealth Parliamentary representation and the census**

The *Representation Act* 1905-1964 obliges the Chief Electoral Officer to ascertain the number of people in the Commonwealth and in each of the States from time to time for the purpose of determining the number of Members of the House of Representatives to be chosen from each State, all 'Statistical Officers of the Commonwealth' being authorised and required to furnish all the information the Chief Electoral Officer needs for this purpose.

After each census the Chief Electoral Officer requests the Commonwealth Statistician to supply the information required for the purposes of the Representation Act. From such information the Chief Electoral Officer prepares the requisite certificate and this is published in the *Commonwealth Gazette*.

A more detailed description outlining the history, purposes, legal basis, organisation and publication of the results of the population census in Australia was included on pages 77-86 of the *South Australian Year Book* 1968.

## **5.2 POPULATION GROWTH AND DISTRIBUTION**

The population of South Australia had reached 17,366 persons at the first Census on 26 February 1844. In 1861, twenty-five years after the first settlers arrived, the population was 126,830 and this figure had more than doubled by the Census in 1881. By 1921 the population was almost 500,000 persons and it is estimated to have reached 1,000,000 persons in January 1963. The population enumerated at the Census, 30 June 1966 was 1,091,875 persons excluding full-blood Aborigines. (A full-blood Aboriginal is defined as a person who describes himself as having more than 50 per cent Aboriginal blood).

Following the repeal in August 1967 of Section 127 of the Commonwealth Constitution, official figures of population include full-blood Aborigines from 1966.

Reporting at the 1966 Census was insufficiently precise to enable a reliable dissection of full-blood and half-blood Aborigines to be made and consequently the difference between inclusive figures and exclusive figures of full-blood Aborigines (published elsewhere) should not be taken as a reliable measure of the Aboriginal population. The 1966 Census figures including full-blood Aborigines have been published for comparison with subsequent population figures only.

Population<sup>(a)</sup>, South Australia, Censuses 1844 to 1966

Census Date		Population			Increase since Previous Census		
		Males	Females	Persons	Males	Females	Persons
1844	26 February ..	9,686	7,680	17,366	..	..	..
1846	26 February ..	12,670	9,720	22,390	2,984	2,040	5,024
1851	1 January ....	35,302	28,398	63,700	22,632	18,678	41,310
1855	31 March .....	43,720	42,101	85,821	8,418	13,703	22,121
1861	8 April .....	65,048	61,782	126,830	21,328	19,681	41,009
1866	26 March ....	85,334	78,118	163,452	20,286	16,336	36,622
1871	2 April .....	95,236	90,189	185,425	9,902	12,071	21,973
1876	26 March ....	109,841	102,687	212,528	14,605	12,498	27,103
1881	3 April .....	145,113	130,231	275,344	35,272	27,544	62,816
1891	5 April .....	161,920	153,292	315,212	16,807	23,061	39,868
1901	31 March ....	180,485	177,861	358,346	18,565	24,569	43,134
1911	3 April .....	207,358	201,200	408,558	26,873	23,339	50,212
1921	4 April .....	248,267	246,893	495,160	40,909	45,693	86,602
1933	30 June .....	290,962	289,987	580,949	42,695	43,094	85,789
1947	30 June .....	320,031	326,042	646,073	29,069	36,055	65,124
1954	30 June .....	403,903	393,191	797,094	83,872	67,149	151,021
1961	30 June .....	490,225	479,115	969,340	86,322	85,924	172,246
1966	30 June .....	548,530	543,345	1,091,875	58,305	64,230	122,535

(a) Excludes full-blood Aborigines.

In the next table, increases in the population have been classified as *recorded natural increase* (the excess of recorded births over recorded deaths) and *other increase* (which consists mainly of the excess of arrivals over departures, either from overseas or interstate). Annual average increases which are given for each ten-year period since 1861 and for the seven-year period 1961-67 show some important aspects of the development of the State, viz:

- (i) The net migration, especially of males, away from South Australia following the mineral discoveries in other States in the 1880s and early 1890s.
- (ii) The slow growth during the economic depression of the 1930s when natural increase fell to a particularly low level, and
- (iii) The high rate of migration in the post 1939-45 War period up to 1960.

## Increases in the Population, South Australia

Period	Recorded Natural Increase			Other Increase			Total Increase		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
<b>Annual Average</b>									
1861-1870 .....	2,052	2,121	4,173	1,003	720	1,723	3,055	2,841	5,896
1871-1880 .....	2,366	2,555	4,921	2,889	1,375	4,264	5,255	3,930	9,185
1881-1890 .....	3,349	3,535	6,884	(-) 1,488	(-) 1,141	(-) 2,629	1,861	2,394	4,255
1891-1900 .....	2,832	3,024	5,856	(-) 973	(-) 567	(-) 1,540	1,859	2,457	4,316
1901-1910 .....	2,665	2,745	5,410	(-) 44	(-) 404	(-) 448	2,621	2,341	4,962
1911-1920 .....	3,508	3,614	7,122	366	926	1,292	3,874	4,540	8,414
1921-1930 .....	3,131	3,300	6,431	1,201	714	1,915	4,332	4,014	8,346
1931-1940 .....	(a) 1,787	(a) 1,929	(a) 3,716	(-) 860	(-) 397	(-) 1,257	927	1,532	2,459
1941-1950 .....	(a) 3,977	(a) 4,026	(a) 8,003	2,705	1,671	4,376	6,682	5,697	12,379
1951-1960 .....	5,631	5,923	11,554	6,279	5,585	11,864	11,910	11,508	23,418
1961-1968 (b) ...	5,962	6,356	12,318	4,734	4,992	9,726	10,696	11,348	22,044

(a) Deaths of defence personnel (except those registered on civil registers during 1940 and 1941) not deducted in calculating natural increase.

(b) Eight-year period. Recorded natural increase includes full-blood Aborigines after 1966. Other increase and total figures include full-blood Aborigines after 1965. All figures before 1966 exclude full-blood Aborigines.

The rate of growth of the population, *i.e.* the increase during the period expressed as a percentage of the population at the beginning of the period, fluctuated widely prior to 1921 then settled at about 2 per cent per annum. From 1928 to 1940 the rate was less than one per cent but since 1947 it has been below 2 per cent in only four years (including the last three) and it exceeded 3 per cent per annum in the mid-1950s.

The State's rate of growth was slower than the Australian rate in every decade from 1881-90 to 1931-40. In the next two decades the steep rise in the rate of net migration enabled an above-average growth rate to be achieved, and this was maintained until 1966. For the next two years the growth rate was below the Australian rate.

Rate of Increase of Population<sup>(a)</sup>, South Australia and Australia

Period	South Australia			Australia		
	Recorded Natural Increase	Other Increase	Total Increase	Recorded Natural Increase	Other Increase	Total Increase
<b>Annual Average</b>						
1861-1870 ..	26.46	10.92	37.38	24.31	12.06	36.37
1871-1880 ..	22.34	19.36	41.70	20.45	10.01	30.46
1881-1890 ..	22.67	(-) 8.66	14.01	19.96	14.23	34.19
1891-1900 ..	16.90	(-) 4.44	12.46	16.91	0.71	17.62
1901-1910 ..	14.70	(-) 1.22	13.48	15.29	1.00	16.29
1911-1920 ..	15.99	2.90	18.89	15.77	4.20	19.97
1921-1930 ..	11.87	3.53	15.40	12.97	5.23	18.20
1931-1940 ..	(b) 6.33	(-) 2.14	4.19	(b) 7.92	0.60	8.52
1941-1950 ..	(b) 12.50	6.83	19.33	(b) 12.04	4.34	16.38
1951-1960 ..	13.81	14.18	27.99	13.71	8.73	22.44
1961-1968(c).	11.74	9.27	21.01	11.78	7.48	19.26

(a) Rate per 1,000 of mean population. (b) See note (a) to previous table. (c) See note (b) to previous table.

Estimates of the population of the State for the seven years to 1968 are given in the following table. The total increase for each year and the rate of growth are also shown.



**Estimated<sup>(a)</sup> Population, South Australia***At 31 December*

Year	Males	Females	Persons	Total Increase for Year	Rate of Growth %
1962.....	501,900	493,900	995,800	18,700	1.91
1963.....	513,300	506,500	1,019,800	24,000	2.41
1964.....	527,600	521,600	1,049,200	29,400	2.88
1965.....	542,600	537,300	1,079,900	30,800	2.94
1966.....	554,800	549,800	1,104,600	21,500	1.99
1967.....	561,800	556,600	1,118,500	13,900	1.26
1968.....	571,000	565,400	1,136,400	17,900	1.60

(a) Figures subsequent to June 1966 include full-blood Aborigines; earlier figures exclude full-blood Aborigines.

Intercensal estimates of population are derived by adding to the population ascertained at the Census the recorded natural increase and the allocation to the State of portion of the net gain to Australia by overseas migration; gains and corresponding losses that result from movement between South Australia and other States are also taken into account, in so far as they are recorded as transfers of residence under child endowment procedures or Commonwealth electoral procedures, supplemented by results of any special count or sample survey. These estimates have been revised according to final results of the Census, 30 June 1966.

These estimates show that an annual increase in population of over 20,000 persons was maintained during the period 1963 to 1965, but it fell significantly below this level in 1967. The rate of growth increased from 1.9 per cent per annum in 1962 to nearly 3 per cent per annum in 1965, but it fell sharply to 1.3 per cent per annum in 1967. In 1968 the rate was 1.6 per cent.

The estimated mean population for South Australia is calculated for the years ended 30 June and 31 December. Estimates for the last ten years are shown in the next table.

**Estimated Mean Population, South Australia**

Year	Year Ended 30 June (a)			Year Ended 31 December (a)		
	Males	Females	Persons	Males	Females	Persons
1959....	458,900	449,500	908,400	465,100	456,000	921,100
1960....	471,500	462,100	933,600	477,400	467,400	944,900
1961....	484,055	473,081	957,136	490,500	479,600	970,100
1962....	493,400	483,600	977,000	497,100	488,400	985,500
1963....	502,100	494,000	996,100	507,800	500,200	1,008,000
1964....	513,900	506,900	1,020,900	520,700	514,100	1,034,800
1965....	527,800	521,500	1,049,300	535,000	529,000	1,064,000
1966....	542,265	536,590	1,078,855	(b) 550,100	(b) 544,500	(b) 1,094,600
1967....	(b) 554,700	(b) 549,300	(b) 1,104,000	(b) 558,600	(b) 553,100	(b) 1,111,700
1968....	(b) 561,900	(b) 556,300	(b) 1,118,200	(b) 566,000	(b) 560,100	(b) 1,126,200

(a) Mean population figures for periods prior to 30 June 1966 are based on estimates exclusive of full-blood Aborigines.

(b) Including full-blood Aborigines.

## EARLY HISTORY OF SETTLEMENT

The census of the population of the colony of South Australia in 1844 revealed that over 10,000 of the total population of 17,366 persons were located in or near Adelaide. In 1846 there was a total population of 22,390 persons and approximately 13,000 of these were located in or near Adelaide. Most of the population outside the Adelaide area had settled to the north as far as Port Wakefield, including a settlement at Gawler Town, and to the south to Encounter Bay. By 1846 over 500 persons had settled further south in an area near Rivoli Bay. Population at Port Lincoln in 1844 was 96 persons and increased to 132 persons in 1846. Kangaroo Island had a population of 70 persons in 1846.

The division of some portions of South Australia into counties was made in 1842 and the census in 1851 was recorded on that basis. Nearly all of the counties at that time were in the present Central Division; exceptions were Counties Stanley (Lower North), Russell (Murray Mallee), Robe (South Eastern) and Flinders (Western).

**Population, South Australia**  
**Census 1851**

County, District, Etc.	Number of Persons
City of Adelaide . . . . .	14,577
County Adelaide . . . . .	29,447
County Hindmarsh . . . . .	3,121
County Sturt . . . . .	1,833
County Eyre . . . . .	361
County Gawler . . . . .	1,011
County Light . . . . .	4,396
County Stanley . . . . .	1,283
County Russell . . . . .	174
County Robe . . . . .	1,209
County Flinders . . . . .	520
Kangaroo Island . . . . .	87
Yorke Peninsula . . . . .	122
Other areas . . . . .	5,559
<b>Total . . . . .</b>	<b>63,700</b>

Most of the population in 'other areas' was in the Burra mining towns of Koorunga, Redruth and Aberdeen and in the vicinity of Burra Creek.

The discovery of copper near Kapunda (County Light) in 1843 and near Burra in 1845 was one of the first causes of a sudden movement of people to new areas. The construction of the railway to Kapunda also helped to open up the land in the Lower North for agriculture.

In 1861 the main country centres of population included Mount Gambier and Port Lincoln, both of which served as agricultural and commercial centres for their respective regions; Kapunda, Burra and Wallaroo, important copper mining centres; Gawler, a manufacturing and distributing centre at the entrance to the rich Barossa Valley; Goolwa, Port Elliot, Robe, Port Augusta and Port Wakefield, small ports; and Strathalbyn and Mount Barker, agricultural centres.

The concentration of people in the Adelaide area led to the need for various community services. Water was laid on in 1861 and gas in 1863.

Thus began the introduction of factors which assisted in an increasing concentration of the population in and around Adelaide; there were increased comforts and amenities as well as greater opportunities for employment.

At this time the two peninsulas and the northern districts had not been exploited and there were very few settlers in the Murray Valley, the Murray Mallee or on Kangaroo Island. Apart from the pull of the mineral fields the chief population movement was towards the South East and along the rich alluvial inter-ridge plains of the Lower North.

Subsequently the movement of settlers into Eyre Peninsula caused the population to rise from 2,600 persons in 1881 to over 6,000 in 1901 and more than 13,000 by 1911.

In the Murray Mallee, farm settlement similar to that in Eyre Peninsula, together with irrigation settlements at Renmark and other areas in the 1880s and 1890s increased the population to 4,700 persons by 1901 and over 13,000 by 1911. Further settlement, including schemes for settlement of ex-servicemen on irrigation areas, resulted in a population of approximately 23,700 persons by 1921.

The pattern of settlement in South Australia from 1861 had been changed by the opening of the northern wheat lands, the drainage of the South Eastern swamps, the increase in the number of farmers in both Yorke and Eyre Peninsulas and in the Murray Mallee, and the development of irrigation in the Murray Valley, especially in the Renmark-Berri area and along the Lower Murray flats. Port Lincoln and Mount Gambier had increased their importance as distributing centres and Port Pirie, Iron Knob and Whyalla had developed as mining and industrial centres. With improved roads and expansion of railway facilities people were able to move about more rapidly. Settlement had become concentrated more into cities and larger towns. By the 1933 Census the population of South Australia had reached 580,949 persons and of these 312,619 were living in the metropolitan area as defined at that date. Port Pirie with a population of 11,680 persons had the highest population of any town outside the metropolitan area; Mount Gambier had 5,539 and Gawler 4,138 persons.

## DISTRIBUTION OF POPULATION

The population of South Australia exclusive of full-blood Aborigines numbered 1,091,875 persons at the Census, 30 June 1966. A large proportion of this total was located in and near the capital city of Adelaide; 727,916 (66.7 per cent) were in the Adelaide Metropolitan Area; 771,175 (70.6 per cent) in the Adelaide Statistical Division (see map page 102.). At the 1954 Census 67 per cent of the population was located within a twenty-five mile radius of the City of Adelaide, and by the 1961 Census had increased to almost 70 per cent. A large proportion (47 per cent) of the remainder outside the Adelaide Statistical Division at the 1966 Census lived in urban areas scattered through the southern portion of the State, while small numbers lived on rural properties, in mining centres, forest reserves, small fishing ports and in construction and maintenance camps in rural areas.

### Urban Areas

For the purpose of presenting population and dwelling statistics new methods have been adopted in the delimitation of metropolitan and certain other urban centres. These methods were first used for the Census, June 1966, and will apply uniformly throughout Australia.

The basic criterion used is *population density*. The geographic units to be classified according to the density criterion are collector's districts, the smallest units available. These areas vary in size and shape, but as far as possible they have been designed to ensure that significant urban development in large rural collector's districts is split off as a separate collector's district. Particular rules apply to contiguous areas with special functions, such as airports, sporting areas and industrial areas, which do not meet the density criterion. Where there is a gap in urban development which is less than two miles (by the shortest rail or road distance) between the edge of one area of urban development and another, the gap is ignored and the urban areas treated as contiguous; if there is a gap of two or more miles between the two urban areas, those urban areas are treated as separate urban areas even if the gap comprises mainly reserved land or a natural barrier.

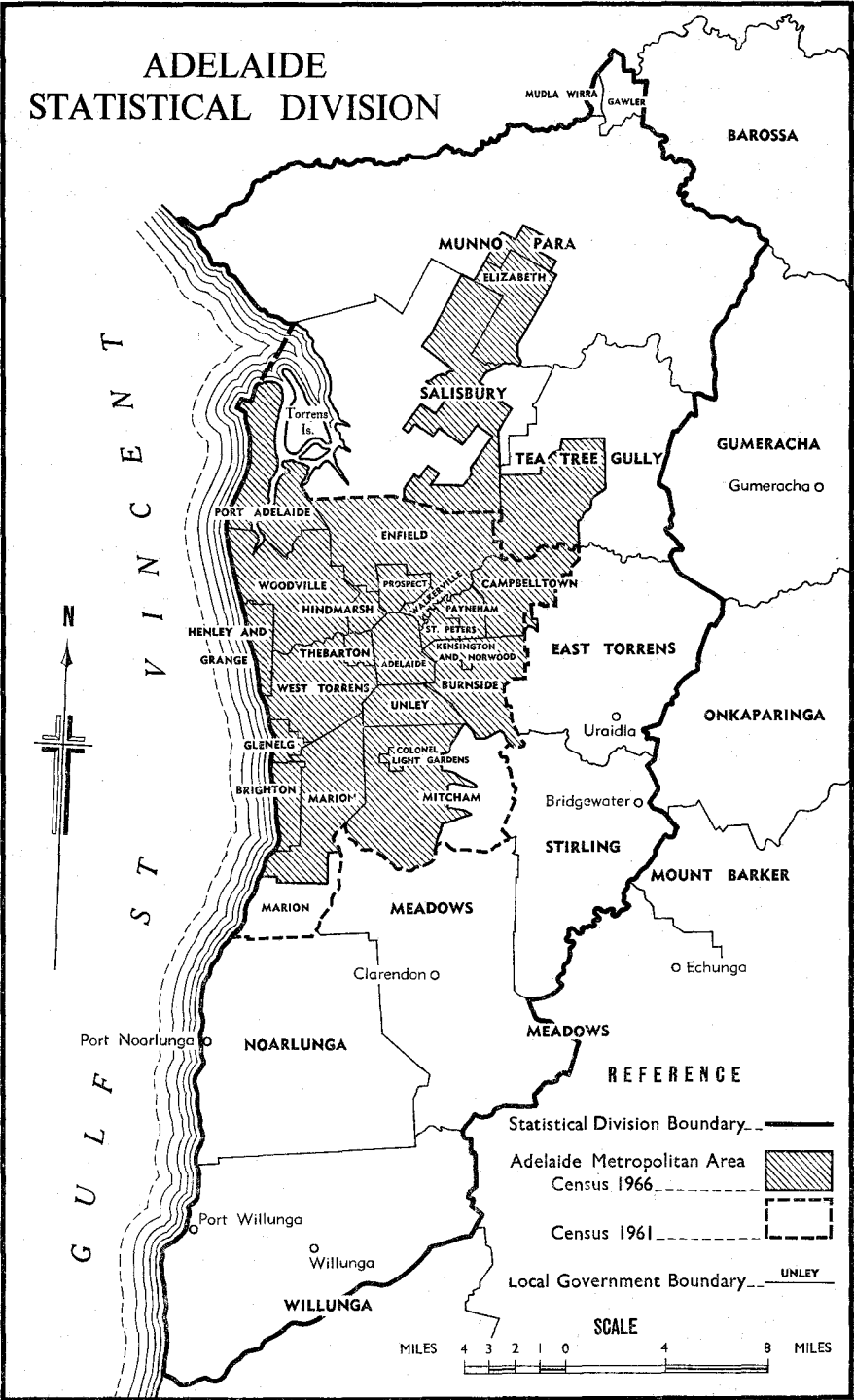
Because of practical difficulties (notably lack of time to carry out an extensive examination of each area in order to re-design suitable collector's districts, and the absence of suitable topographic boundaries around small towns) the new criteria at present have not been applied to extra-metropolitan urban centres in South Australia; instead, the following procedures were used.

Municipalities, cities and towns of over 1,000 population have been classified as urban, except where they contain a very large rural component, in which case the urban centres have been delimited from aerial photographs or by field inspection, *e.g.* Renmark Municipality. Where extensive urban development is known to extend beyond the boundary the extension has been regarded as an integral part of the urban centre and is included, *e.g.* City of Port Pirie. Other urban centres have been extensively examined on the most recent aerial photographs available and the boundaries set as closely as possible to the periphery of the built-up area without regard to local government boundaries.

In addition, holiday areas are defined as urban if they have 250 or more dwellings (at least 100 of which are occupied on Census night) and the settlement has a recognisable core (as opposed to a straggle of houses along a coastline, for example). The population of such an area is usually at a minimum on Census night because the Census is taken in mid-week and during the winter.

The boundary of an urban centre is, therefore, the peripheral boundary of an aggregate of contiguous urban collector's districts, the densities of which are at least 500 persons per square mile. The boundary is a moving one which reflects the process of urbanisation. The use of objective criteria will enable valid comparisons to be made between one urban centre and another, and between the population for an urban centre at one Census with the populations at succeeding Censuses.

Around Adelaide (and all other capital cities in Australia), two boundaries have been defined. The outer one, which is fixed, circumscribes the area in close economic and social contact with the main city, and which contains the anticipated urban development of the city for a period of at least twenty to thirty years. This boundary defines the Adelaide Statistical Division (see map, page 102). The inner boundary indicates the area which, at the time of the Census, meets the criteria for urban areas described above. As urbanisation proceeds, this boundary will move outwards to encompass peripheral development. This



boundary defines the Adelaide Metropolitan Area which currently contains nearly all the metropolitan area as defined at the 1961 Census, and in addition, includes the City of Elizabeth and large portions of the Cities of Salisbury and Tea Tree Gully, and small parts of Munno Para and East Torrens District Councils (see map, page 102.).

In future the boundaries of all population clusters of 1,000 or more persons, having a minimum density of 500 persons per square mile, will be delimited using the above density criteria.

In 1921 the rural population was 195,054 and at that time represented 39.4 per cent of the total population (42.1 per cent of males and 36.7 per cent of females). There were 214,762 persons classified as living in rural areas at the 1933 Census but the total had fallen slightly to 200,065 in 1961, and the proportion of the total population was down to 20.6 per cent (21.7 per cent of males and 19.6 per cent of females). A further fall occurred during 1961-66. According to final census figures, the total rural population (exclusive of full-blood Aborigines) was 188,590 persons at 30 June 1966, and the proportion of the total population had fallen further to 17.3 per cent (18.2 per cent of males and 16.3 per cent of females). In fact the proportion of the population living in rural areas has shown a steady decrease over the period since 1921.

### Urban and Rural Population, South Australia

*Censuses 1921 to 1966*

*(Excludes Full-Blood Aborigines)*

Census	Urban				Rural		Total (including Migratory)	
	Metropolitan (a)		Other (b)		Number	Per Cent	Number	Per Cent
	Number	Per Cent	Number	Per Cent				
1921.....	255,375	51.57	41,637	8.41	195,054	39.39	495,160	100.00
1933.....	312,619	53.81	51,456	8.86	214,762	36.97	580,949	100.00
1947.....	382,454	59.20	65,911	10.20	196,007	30.34	646,073	100.00
1954.....	483,508	60.66	110,107	13.82	201,133	25.23	797,094	100.00
1961.....	587,957	60.66	177,380	18.30	200,065	20.64	969,340	100.00
1966.....	(a) 727,916	66.67	173,796	15.92	188,590	17.27	1,091,875	100.00

(a) Prior to 30 June 1966 the Metropolitan Area of Adelaide comprised twenty-one municipalities. From 30 June 1966 new criteria, based mainly on population density have been adopted for all capital cities; the boundary for Adelaide has been extended to embrace new areas including Elizabeth, Salisbury and Tea Tree Gully.

(b) 'Other urban' up to the 1947 Census comprised all municipalities outside the Metropolitan Area. For the 1954 and 1961 Censuses non-municipal towns of 1,000 or more persons were also included, but in 1961 and 1966 municipalities of less than 1,000 persons were excluded. In 1966, four centres viz Goolwa, Port Elliot, Port Broughton and Port MacDonnell, although having a population of less than 1,000, were regarded as urban on a dwelling density basis.

For statistical purposes the settled southern portion of the State is divided into seven statistical divisions, as shown on the map inside the back cover of this volume. The population of each division at the last four censuses is shown in the following table. The figures for Adelaide and Central have been combined for 1947, 1954 and 1961 because the concept of the Adelaide Statistical Division was first introduced at the 1966 Census.

## Population of Statistical Divisions, South Australia

Censuses 1947 to 1966

(Excludes Full-Blood Aborigines)

Statistical Division	Population at 30 June				Proportion of State Population			
	1947	1954	1961	1966	1947	1954	1961	1966
					Per Cent			
Adelaide .....	475,942	591,520	734,446	771,175	73.67	74.21	75.77	70.63
Central .....				74,112				6.79
Lower North .....	45,688	50,009	49,898	48,201	7.07	6.27	5.15	4.41
Upper North .....	18,390	20,946	22,944	22,632	2.85	2.63	2.37	2.07
South Eastern .....	31,556	42,614	52,241	55,567	4.89	5.35	5.39	5.09
Western .....	29,174	34,043	42,394	52,585	4.51	4.27	4.37	4.82
Murray Mallee .....	39,058	47,168	52,048	55,210	6.04	5.92	5.37	5.06
Remainder of State .....	4,564	8,448	11,431	10,820	0.71	1.06	1.18	0.99
Migratory .....	1,701	2,346	3,938	1,573	0.26	0.29	0.40	0.14
Total .....	646,073	797,094	969,340	1,091,875	100.00	100.00	100.00	100.00

Over 80 per cent of the increase in the State's population between 1947 and 1966 has occurred in Adelaide and Central Divisions, and the proportion of population in these divisions has increased from 73.7 per cent in 1947 to 77.4 per cent in 1966. Some gain in population was recorded in all Statistical Divisions during this period, but there has been a marked fall in the proportion of the population in Lower North, Upper North and Murray Mallee Divisions. Population in the north of the State is very scattered; the area outside the seven statistical divisions, which covers 78.7 per cent of the total area of the State, contained only 10,820 persons (about one per cent of the population) at the 1966 Census. Approximately two-thirds of these persons were in either the Weapons Research Establishment area of Woomera-Maralinga, or the three mining towns of Leigh Creek, Andamooka and Coober Pedy.

## Population in and near Adelaide

The Adelaide Metropolitan Area comprises twenty complete local government areas and part of each of six others. Of these, seventeen have been proclaimed as cities, the latest being Tea Tree Gully which was officially declared a city on 8 February 1968. Qualification for city status within the metropolitan area is dependent on the population reaching 15,000 persons, but a subsequent fall in population below this level (as has occurred in the City of Kensington and Norwood) does not involve loss of city status.

Over the last two decades there has been a considerable fall in the population of the City of Adelaide, and lesser falls in all of the older municipalities close to the city, namely Prospect, Hindmarsh, Thebarton, Unley, Kensington and Norwood, St Peters and Walkerville. The greatest proportionate increases in population have occurred in the local government areas of Munno Para, Salisbury, Elizabeth, Enfield (generally north of the city), Campbelltown and Tea Tree Gully (north-east), Marion and Brighton (south-west).

Although figures for the Metropolitan Area, defined according to the density criteria, are not available for the 1947 and 1954 Censuses, there appears to have been a continual increase in the proportion of the total population residing in the Metropolitan Area. This upward trend is shown in the preceding table for the 1961-1966 intercensal period. At the 1961 Census, the population of the Metropolitan Area defined according to the new density criteria is estimated to have been 580,449 persons, or 59.9 per cent of the total State population and this figure had increased to 727,916 (66.7 per cent) at the Census, 30 June 1966.

**Population, Adelaide Metropolitan Area***(Excludes Full-Blood Aborigines)*

Local Government Area	Census 30 June 1961 (a)	Census 30 June 1966
Adelaide (C.) .....	23,051	18,577
Brighton (C.) .....	20,337	22,620
Burnside (C.) .....	36,153	38,758
Campbelltown (C.) .....	19,643	32,083
Colonel Light Gardens (M.) .....	3,671	3,404
East Torrens (D.C.) (Part) .....	(b)	573
Elizabeth (C.) .....	(b)	32,949
Enfield (C.) .....	72,028	80,261
Glenelg (M.) .....	14,492	14,762
Henley and Grange (M.) .....	11,680	14,146
Hindmarsh (M.) .....	12,914	11,352
Kensington and Norwood (C.) .....	13,476	11,928
Marion (C.) (Part) .....	56,694	66,754
Mitcham (C.) (Part) .....	38,696	49,299
Munno Para (D.C.) (Part) .....	(b)	10,284
Payneham (C.) .....	14,930	16,844
Port Adelaide (C.) .....	38,923	39,823
Prospect (C.) .....	22,184	21,411
St Peters (M.) .....	11,727	11,334
Salisbury (C.) (Part) .....	(b)	33,912
Tea Tree Gully (D.C.) (Part) (c) .....	502	20,126
Thebarton (M.) .....	12,884	12,296
Unley (C.) .....	40,280	39,727
Walkerville (M.) .....	4,464	4,593
West Torrens (C.) .....	40,681	46,222
Woodville (C.) .....	71,039	73,878
<b>Metropolitan Area .....</b>	<b>580,449</b>	<b>727,916</b>

NOTE: Parts of Burnside, Campbelltown and Enfield were rural in 1961.

(C.)—City; (M.)—Municipality; (D.C.)—District Council.

(a) These figures represent approximately the population that would have been recorded as Metropolitan if the new criteria had been in force at the 1961 Census.

(b) Non-metropolitan in 1961.

(c) Proclaimed a City 8 February 1968.

Significant growth has also occurred in the area adjacent to the Metropolitan Area within the Adelaide Statistical Division. The most rapid growth in this non-metropolitan part of the Adelaide Statistical Division during the 1961-1966 intercensal period occurred in urban Reynella-Port Noarlunga (Noarlunga District Council) and in urban Crafrers-Bridgewater (Stirling District Council).

Urban Reynella-Port Noarlunga increased from 2,429 persons in 1961 to 11,818 persons in 1966, an increase of 386.5 per cent (the largest percentage increase of any urban area outside the Metropolitan Area). Urban Crafrers-Bridgewater increased from 4,048 persons in 1961 to 4,487 persons in 1966 (9.5 per cent increase).

The following table shows the population of the Adelaide Statistical Division at the 1961 and 1966 Censuses.



**Population, Adelaide Statistical Division**  
(Excludes Full-Blood Aborigines)

Area	Census 30 June 1961 (a)	Census 30 June 1966
Metropolitan Area .....	580,449	727,916
Local Government Area:		
Burnside (C.) (Rural) .....	113	(b)
Campbelltown (C.) (Rural) .....	1,302	(b)
East Torrens (D.C.) (Rural) .....	3,664	3,240
Elizabeth (C.) .....	22,831	(b)
Enfield (C.) (Rural) .....	476	(b)
Gawler (M.) .....	5,639	5,703
Marion (C.) (Rural) .....	1,770	196
Meadows (D.C.) (Rural) (c) .....	2,242	2,824
Mitcham (C.) (Rural) .....	4,426	171
Mudla Wirra (D.C.) (c) .....	111	155
Munno Para (D.C.) .....	3,154	3,993
Noarlunga (D.C.) .....	5,492	14,198
Salisbury (C.) .....	12,884	1,850
Stirling (D.C.) .....	7,075	7,551
Tea Tree Gully (D.C.) (d) .....	5,308	1,188
Willunga (D.C.) (c) .....	2,210	2,190
Total .....	659,146	771,175

NOTE: Generally, where a decrease in population is shown between 1961 and 1966, part of the relevant area has merged with the Metropolitan Area.

(C.)—City; (M.)—Municipality; (D.C.)—District Council.

(a) These figures represent approximately the population that would have been recorded if the new criteria had been in force at the 1961 Census.

(b) Merged with Metropolitan Area.

(c) Part of L.G.A. in Adelaide Statistical Division and part in Central Statistical Division.

(d) Proclaimed a City 8 February 1968.

### Population Beyond the Adelaide Statistical Division

Whereas in each of the eastern States, New South Wales, Victoria and Queensland, there are at least four centres outside the capital city with a population of more than 20,000 persons, there is only one in South Australia. This city, Whyalla, had a population of 22,121 persons at the Census, 30 June 1966, making it the largest city outside the Metropolitan Area. Early expansion of Whyalla was a direct consequence of it being the closest port to the rich iron ore deposits at Iron Knob, Iron Baron and Iron Monarch. Whyalla's population increased with the establishment of a ship-building yard—Australia's largest—in 1940. As ship-building activities have expanded the population has steadily increased. More recently, growth has been accelerated by the construction of a modern steel-making plant which began production in February 1965. The population of Whyalla at the Census, 1961 was 13,711 persons; in the following five years it had grown by 61.3 per cent.

At the 1966 Census there were only three other urban areas outside of the Adelaide Statistical Division, with population in excess of 10,000 persons. These were, Mount Gambier (17,251 persons), the centre of the rich and fertile south-eastern portion of the State, Port Pirie (15,566 persons), the most convenient port for shipping the rich silver-lead-zinc production of Broken Hill (N.S.W.), and Port Augusta (10,103 persons), the site of a large power station which uses Leigh Creek brown coal. Whyalla, Mount Gambier, Port Pirie and Port Augusta have all been proclaimed as cities, as the population of each is above 10,000, the qualifying level for extra-metropolitan towns.

Although there were no other towns of city size outside the Adelaide Statistical Division (Port Lincoln being the next largest with a population of 8,888 persons), there were a number of centres with population between 3,000 and 6,000 persons spread through the settled areas. Growth or decline of these and other urban centres outside the Adelaide Statistical Division between 1961 and 1966 can be seen from the following table.

**Population Growth of Urban Centres<sup>(a)</sup>, South Australia**  
(Excludes Full-Blood Aborigines)

Urban Centre	Census		Inter-Censal Increase Per Cent	Urban Centre	Census		Inter-Censal Increase Per Cent
	June 1961	June 1966			June 1961	June 1966	
Angaston .....	1,913	1,887	-1.36	Moonta .....	1,862	1,702	-2.15
Balaklava .....	1,301	1,199	-7.84	Mount Barker .....	1,872	1,934	3.31
Barmera .....	1,167	1,484	27.16	Mount Gambier .....	15,388	17,251	12.11
Berri .....	1,692	2,232	31.91	Murray Bridge .....	5,404	5,957	10.23
Bordertown .....	1,566	1,758	12.26	Naracoorte .....	4,410	4,378	-0.73
Burra .....	1,382	1,342	-2.89	Nuriootpa .....	1,841	2,041	10.86
Ceduna .....	1,280	1,406	9.84	Penola .....	1,375	1,383	0.58
Clare .....	1,622	1,579	-2.65	Peterborough .....	3,430	3,117	-9.13
Crystal Brook .....	1,208	1,235	2.24	Port Augusta .....	9,711	10,103	4.04
Gladstone .....	1,033	1,035	0.19	Port Broughton (b) .....	397	418	5.29
Goolwa (b) .....	509	561	10.22	Port Elliot (b) .....	563	565	0.36
Jamestown .....	1,304	1,282	-1.69	Port Lincoln .....	7,508	8,888	18.38
Kadina .....	3,102	3,022	-2.58	Port MacDonnell (b) .....	494	531	7.49
Kapunda .....	1,164	1,119	-3.87	Port Pirie .....	15,544	15,566	0.14
Keith .....	(c) 961	1,097	14.15	Renmark .....	2,854	3,054	7.01
Kingscote .....	(c) n.a.	1,071		Strathalbyn .....	1,465	1,449	-1.09
Kingston (S.E.) .....	(c) 939	1,065	13.42	Tallem Bend .....	2,049	1,947	-4.98
Leigh Creek .....	1,020	1,014	-0.59	Tanunda .....	1,863	1,986	6.60
Lobethal .....	1,085	1,098	1.20	Victor Harbor .....	2,816	3,128	8.39
Loxton .....	2,127	2,418	13.68	Wallaroo .....	2,237	2,094	-6.39
Maitland .....	(c) 989	1,017	2.83	Whyalla .....	13,711	22,121	61.34
Mannum .....	1,841	2,034	10.48	Woomera-Maralinga .....	4,808	4,745	-1.31
Millicent .....	3,401	4,533	33.28				

NOTE: Boundaries for 1961 have been redrawn according to the new criteria and the populations (partly estimated) are shown in this table for comparison with 1966 populations. The intercensal increase may therefore reflect (1) population changes within the original 1961 boundaries (2) urban growth beyond the original boundaries and (3) the merging of areas.

(a) Outside Adelaide Statistical Division. For definition of 'urban' see pages 100-3.

(b) 'Holiday Area' classified as 'urban' on a dwelling density basis.

(c) Non-urban in 1961.

n.a.—Not available.

### 5.3 BIRTHS AND DEATHS

Compulsory registration of births and deaths was first provided in South Australia in 1842 when an Act 'for registering Births, Deaths and Marriages in the Province of South Australia' was passed. Current legislation is contained in the Births, Deaths and Marriages Registration Act, 1966 which came into operation on 1 January 1968 and the administration of the Act is the responsibility of the Principal Registrar of Births, Deaths and Marriages. For registration purposes the State is divided into twenty-two registration districts each of which has a registry office in the charge of a District Registrar.

The Principal Registrar maintains a register of all live births and of all deaths registered in the State and each District Registrar maintains, in a register, duplicate

copies of the registrations of births and deaths which occurred in the district under his jurisdiction. Up to the end of 1967 separate registers were kept of still births, which were not included in the registrations or statistics of either live births or of deaths. Compulsory registration of still births was introduced in South Australia in 1937. The Act repealed by the current legislation defined a still born child as any which issued forth from its mother after the twenty-eighth week of pregnancy and which did not, at any time after being expelled from its mother, breathe or show any signs of life.

The current legislation does not require the Principal Registrar to maintain a register of still births, but it provides for a 'Medical Certificate of Cause of Perinatal Death' to be filled in and forwarded to the Principal Registrar by the attending medical practitioner in respect of a 'child not born alive', defined by the Act as a child whose heart has not beaten after its complete expulsion or extraction from its mother and who is either: (a) where the period of gestation is reliably ascertainable, a child of not less than twenty weeks gestation; or (b) in any other case, a child weighing not less than four hundred grammes at birth. The 'perinatal' certificates are now also being provided by attending medical practitioners for children dying within twenty-eight days of birth. These new provisions are part of Australia-wide arrangements which will enable a much more informed study of the causes of perinatal mortality.

The birth of each live-born child is required to be registered by a parent within sixty days (previously forty-two days) of the date of birth. Registration of a live birth after the expiration of sixty days following the date of birth requires also the payment of a fee and a declaration in a form prescribed by the Act.

A death is required to be registered within fourteen days (previously ten) of the date of death by the occupier of the building or place in which the death occurred. Special provisions and penalties exist for the late registration of a death. A body may not be buried unless the undertaker is in possession of a 'Notice of signing of Medical Certificate of Cause of Death' signed by a medical practitioner or of an order by a coroner for burial, and the undertaker is required within seven days of the disposal of the body to notify the Principal Registrar of such disposal.

Births and deaths of Aborigines when registered are incorporated in registers, but to the end of 1966 have been excluded from statistics where there was definite indication that they were of full-blood. Statistics of births and deaths for 1967 and subsequent years cover all registrations.

In accordance with international practice, statistics for a period are on the basis of the births and deaths which were registered during that period. However, numbers registered in a period usually differ from the number of occurrences in the same period and, mainly because of the greater allowable period for registration, such variations generally are more apparent in birth than in death figures.

## BIRTHS

In the following table, which shows the live birth rate, the masculinity of live births and the totals and rates of still births, a comparison between the births which actually occurred and those which were registered for the last ten years is also shown.

## Live Births and Still Births, South Australia

Year	Total Live Births Occurred (a)	Births Registered						
		Live-born					Still-born	
		Total	Rate (b)	Males	Females	Masculinity (c)	Total	Rate (d)
1959....	20,877	20,372	22.12	10,325	10,047	102.77	281	13.61
1960....	21,143	20,966	22.19	10,760	10,206	105.43	280	13.18
1961....	21,372	22,399	23.09	11,402	10,997	103.68	272	12.00
1962....	21,322	21,361	21.67	11,003	10,358	106.23	278	12.85
1963....	21,194	21,367	21.20	11,006	10,361	106.23	262	12.11
1964....	20,808	20,866	20.16	10,849	10,017	108.31	252	11.93
1965....	20,751	20,891	19.63	10,778	10,113	106.58	256	12.11
1966....	20,250	20,319	18.62	10,537	9,782	107.72	237	11.53
1967....	20,413	20,386	18.34	10,402	9,984	104.19	211	10.24
1968....	21,175	21,207	18.83	10,949	10,258	106.74	216 (e)	10.08

NOTE: Births of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Figures are subject to the addition of a few very late registrations.

(b) Per 1,000 of mean population.

(c) Number of male births per 100 female births.

(d) Per 1,000 of all births (live and still).

(e) Figures derived from perinatal death certificates.

The birth rate per thousand of the mean population was above 45 in the late 1850s then declined generally to 23.8 in 1903 before improving gradually to reach nearly 29 in 1914. The subsequent war years brought about a further decline and except for a temporary revival in 1920 and 1921 the rate continued to fall to 14.1 in 1935, the lowest on record. From then there was a general upward trend to 25.2 in 1947 and since then there has been a falling off which has been more marked in the latest five years. The rate in 1968 was 18.8, which was well below the Australian rate of 20.0 and lower than the rate in any other State except New South Wales.

## Ex-nuptial Births and Legitimations

Except for a slight fall in 1967 the ex-nuptial birth rates for 1962 to 1968 were successively the highest recorded. The rate had been about 3 per 100 births since the early 1920s and did not vary greatly until the late 1950s but has risen each year since 1959 except 1967.

The legitimization of an ex-nuptial child upon the subsequent marriage of the parents which was first provided for in South Australia by the Legitimation Act, 1898, the provisions of which were later incorporated in the Births and Deaths Registration Act, was possible only if there was no legal impediment to the marriage of the parents at the time of the birth of the child. The Commonwealth *Marriage Act* 1961-1966, which came into operation on 1 September 1963, enables also, upon the subsequent marriage of the parents, the legitimization of a child whose parents were legally unable to marry at the time of the birth of the child. Legitimations under this Act take place whether or not the child was living at the time of marriage, and the child is considered legitimate from the date of birth or in the case of a child born before 1 September 1963, at that date. The effect of the implementation of this change in legislation is shown in the following table.

**Ex-nuptial Live Births and Legitimations, South Australia**

Year	Ex-nuptial Live Births		Legitimations
	Number	Rate per 100 Births	
1959	745	3.66	51
1960	841	4.01	40
1961	1,026	4.58	76
1962	1,017	4.76	58
1963	1,059	4.96	245
1964	1,239	5.94	450
1965	1,310	6.27	268
1966	1,372	6.75	284
1967	1,375	6.74	295
1968	1,558	7.35	240

NOTE: Births of full-blood Aborigines where identified in registrations were excluded before 1967.

**Confinements and Live Births**

The next table shows the number of confinements and live births in 1966 and 1967, classified separately for single births and for multiple births in which at least one issue was live-born.

Multiple births occur at a fairly regular rate of a little over ten cases per 1,000 confinements, having fallen below this level in only three years (1964, 1966 and 1967) since 1950. There is a marked tendency for multiple births to be of the same sex; in 1967 there were 138 cases of twins of the same sex compared with only 59 cases of one male and one female issue.

**Confinements<sup>(a)</sup> and Live Births: Class of Birth, South Australia**

Particulars	1966				1967			
	Confinements (a)	Live Births			Confinements (a)	Live Births		
		Male	Female	Total		Male	Female	Total
<b>Nuptial</b>								
Single births ..	18,619	9,664	8,955	18,619	18,631	9,511	9,120	18,631
Twins .....	165	178	150	328	188	185	189	374
Triplets .....	—	—	—	—	2	3	3	6
<b>Total nuptial ..</b>	<b>18,784</b>	<b>9,842</b>	<b>9,105</b>	<b>18,947</b>	<b>18,821</b>	<b>9,699</b>	<b>9,312</b>	<b>19,011</b>
<b>Ex-nuptial</b>								
Single births ..	1,350	685	665	1,350	1,357	696	661	1,357
Twins .....	11	10	12	22	9	7	11	18
Triplets .....	—	—	—	—	—	—	—	—
<b>Total ex-nuptial</b>	<b>1,361</b>	<b>695</b>	<b>677</b>	<b>1,372</b>	<b>1,366</b>	<b>703</b>	<b>672</b>	<b>1,375</b>
<b>Total ....</b>	<b>20,145</b>	<b>10,537</b>	<b>9,782</b>	<b>20,319</b>	<b>20,187</b>	<b>10,402</b>	<b>9,984</b>	<b>20,386</b>

NOTE: Births of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Includes only those confinements which resulted in one or more live births.

In the table below confinements and live births in 1966 and 1967 have been shown in relation to the age group of the mother.

### Confinements<sup>(a)</sup> and Live Births: Age Group of Mother, South Australia

Age Group of Mother	1966				1967			
	Confinements (a)	Live Births			Confinements (a)	Live Births		
		Male	Female	Total		Male	Female	Total
10-14 .....	10	5	5	10	11	4	7	11
15-19 .....	2,249	1,190	1,067	2,257	2,110	1,095	1,027	2,122
20-24 .....	6,835	3,518	3,364	6,882	7,267	3,738	3,588	7,326
25-29 .....	5,826	3,048	2,832	5,880	6,029	3,115	2,978	6,093
30-34 .....	2,976	1,583	1,426	3,009	2,805	1,492	1,357	2,849
35-39 .....	1,687	907	808	1,715	1,475	722	771	1,493
40-44 .....	533	267	270	537	439	209	232	441
45-49 .....	24	15	9	24	45	22	23	45
Not stated .....	5	4	1	5	6	5	1	6
<b>Total ....</b>	<b>20,145</b>	<b>10,537</b>	<b>9,782</b>	<b>20,319</b>	<b>20,187</b>	<b>10,402</b>	<b>9,984</b>	<b>20,386</b>

NOTE: Births of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Includes only those confinements which resulted in one or more live births.

Nuptial confinements classified according to the relative age groups of the parents, and ex-nuptial confinements classified to the age group of the mother are shown for 1967 in the following table.

### Confinements<sup>(a)</sup>: Relative Ages of Parents, South Australia, 1967

Age Group of Father (Nuptial Births)	Age Group of Mother								Total
	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	Not stated	
Under 20 .....	264	55	—	—	—	—	—	—	319
20-24 .....	1,026	2,692	239	6	3	—	—	—	3,966
25-29 .....	228	3,180	2,820	197	12	1	—	—	6,438
30-34 .....	43	711	2,025	1,163	115	7	1	—	4,065
35-39 .....	6	173	599	977	657	59	2	1	2,474
40-44 .....	3	23	137	278	448	198	12	—	1,099
45-49 .....	—	5	14	55	121	103	14	—	312
50 and over .....	—	2	7	17	45	50	14	1	136
Not stated .....	1	4	—	2	1	—	—	4	12
<b>Married mothers ....</b>	<b>1,571</b>	<b>6,845</b>	<b>5,841</b>	<b>2,695</b>	<b>1,402</b>	<b>418</b>	<b>43</b>	<b>6</b>	<b>18,821</b>
<b>Unmarried mothers ..</b>	<b>550</b>	<b>422</b>	<b>188</b>	<b>110</b>	<b>73</b>	<b>21</b>	<b>2</b>	<b>—</b>	<b>1,366</b>
<b>Total mothers ....</b>	<b>2,121</b>	<b>7,267</b>	<b>6,029</b>	<b>2,805</b>	<b>1,475</b>	<b>439</b>	<b>45</b>	<b>6</b>	<b>20,187</b>

(a) Includes only those confinements which resulted in one or more live births.

The following table shows the first live births to married mothers in 1967 classified to age group of mother and duration of marriage. Only existing marriages are taken into account, therefore some inclusions in the table relate to the first birth of an existing marriage to a mother who has had also a child or children by a previous marriage.

**Nuptial First Live Births: Age Group of Mother and Duration of Marriage  
South Australia, 1967**

Duration of Existing Marriage	Age Group of Mother							Total
	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	
Under 1 month .....	20	14	3	1	1	—	—	39
1 month .....	23	17	1	1	2	—	—	44
2 months .....	46	23	3	2	—	—	—	74
3 months .....	85	59	4	2	3	—	—	153
4 months .....	153	115	8	—	1	1	—	278
5 months .....	262	192	16	4	3	1	—	478
6 months .....	273	219	20	2	1	—	—	515
7 months .....	102	84	17	2	3	—	—	208
8 months .....	28	86	21	6	2	1	—	144
9 months .....	39	160	51	5	6	—	—	261
10 months .....	33	148	43	16	5	2	1	248
11 months .....	32	133	32	16	2	—	—	215
1 year .....	173	1,224	314	63	30	10	1	1,815
2 years .....	32	759	268	51	22	5	1	1,138
3 years .....	4	305	266	28	5	5	—	613
4 years .....	1	112	196	25	8	—	—	342
5 years and over .....	—	45	298	125	75	17	—	560
Not stated .....	5	3	—	1	—	—	—	9
<b>Total nuptial first births (a)</b>	<b>1,311</b>	<b>3,698</b>	<b>1,561</b>	<b>350</b>	<b>169</b>	<b>42</b>	<b>3</b>	<b>7,134</b>

(a) Live-born children only. In cases of multiple births the eldest live-born child is included.

### DEATHS

The following table shows the number of deaths and death rates per 1,000 of the mean population since 1930.

#### Deaths and Death Rates, South Australia

Period	Number of Deaths			Death Rate (a)		
	Males	Females	Persons	Males	Females	Persons
<b>Annual Average</b>						
1930-34 .....	2,671	2,330	5,001	9.21	8.08	8.65
1935-39 (b) .....	2,929	2,501	5,430	9.89	8.47	9.19
1940-44 (b) .....	3,348	2,887	6,235	11.07	9.43	10.25
1945-49 (b) .....	3,389	2,980	6,369	10.48	9.12	9.80
1950-54 .....	3,832	3,191	7,023	10.06	8.56	9.31
1955-59 .....	4,248	3,430	7,678	9.62	7.97	8.80
1960-64 .....	4,585	3,607	8,192	9.19	7.36	8.29
<b>Year</b>						
1964 .....	5,008	3,898	8,906	9.62	7.58	8.61
1965 .....	4,836	3,952	8,788	9.04	7.47	8.26
1966 .....	5,215	4,108	9,323	9.51	7.56	8.54
1967 .....	5,031	4,040	9,071	9.01	7.30	8.16
1968 .....	5,555	4,361	9,916	9.81	7.79	8.81

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Per 1,000 of mean population.

(b) Excludes deaths of defence personnel and of internees and prisoners of war from overseas for the period September 1939 to June 1947.

Male and female deaths in selected age groups for each of the five years 1963 to 1967 are shown in the following table.

### Deaths in Age Groups, South Australia

Year	Age at Death								Total Deaths
	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65 and Over	
MALES									
1963....	265	45	85	83	201	473	825	2,701	4,678
1964....	282	52	113	105	219	409	893	2,934	(a) 5,008
1965....	276	55	91	88	197	522	863	2,744	4,836
1966....	272	54	120	82	224	454	945	3,064	5,215
1967....	217	58	136	73	206	482	923	2,936	5,031
FEMALES									
1963....	223	28	36	39	118	206	362	2,511	3,523
1964....	196	27	46	52	110	230	437	2,800	3,898
1965....	208	42	31	42	124	233	425	2,847	3,952
1966....	159	34	44	50	126	275	451	2,969	4,108
1967....	177	25	45	39	103	250	440	2,961	4,040

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Includes one death for which age was not stated.

A long established trend of increases in deaths at the higher ages has been offset to some degree by a decrease in those in the younger age groups. The effect of this trend related to the changes in age distribution of the population is illustrated in the next tables, which show age-specific death rates, *i.e.* deaths in each age group expressed as a rate per 1,000 of the population in that age group. Because age constitution of the population is known accurately only at censuses the periods shown are those with a census date as their centre.

### Age-Specific Death Rates: Males, South Australia

Age Group	Death Rate (a)							Reduction Per Cent 1900-02 to 1965-67
	1900-02	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67	
0-4 .....	32.12	19.98	9.90	8.09	6.41	5.82	4.58	86
5-9 .....	2.81	2.33	1.18	1.00	0.52	0.50	0.44	84
10-14 .....	1.85	1.55	1.08	0.68	0.65	0.46	0.55	70
15-19 .....	2.88	2.41	1.69	1.42	1.50	1.08	1.19	59
20-24 .....	4.19	3.47	2.35	1.44	1.88	1.37	1.33	68
25-29 .....	5.16	3.67	2.51	1.59	1.70	1.59	1.34	74
30-34 .....	5.30	3.97	2.51	1.88	1.57	1.62	1.13	79
35-39 .....	6.77	5.12	3.23	2.41	2.29	2.08	2.23	67
40-44 .....	8.50	6.10	4.73	3.63	3.56	3.43	3.27	62
45-49 .....	10.26	8.37	6.82	6.12	5.48	5.44	5.71	44
50-54 .....	14.19	11.58	9.82	10.74	10.16	9.24	9.59	32
55-59 .....	20.74	18.99	15.11	16.28	15.71	15.75	15.92	23
60-64 .....	30.23	26.02	24.98	26.08	24.33	24.39	26.69	12
65-69 .....	47.24	41.62	36.14	40.08	39.31	37.84	40.55	14
70-74 .....	64.27	62.49	57.07	60.79	62.59	59.47	63.86	1
75-79 .....	89.66	105.50	92.60	97.69	94.55	88.56	90.71	(b) 1
80-84 .....	140.35	158.90	147.86	145.56	141.64	135.85	138.50	1
85 and over .....	246.96	269.50	257.03	248.89	235.84	227.39	228.91	7
All ages.....	12.03	10.75	9.29	10.87	9.80	9.00	9.17	24

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Average annual number of deaths per 1,000 of population at ages shown. (b) Increase.



## Age-Specific Death Rates: Females, South Australia

Age Group	Death Rate (a)							Reduction Per Cent 1900-02 to 1965-67
	1900-02	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67	
0-4 .....	27.20	16.29	8.29	7.12	5.01	3.93	3.47	87
5-9 .....	2.02	2.30	1.04	0.54	0.45	0.35	0.33	84
10-14 .....	1.64	1.32	0.88	0.38	0.42	0.30	0.29	82
15-19 .....	3.47	2.71	1.25	0.75	0.52	0.37	0.44	87
20-24 .....	4.16	2.91	2.36	1.04	0.63	0.58	0.46	89
25-29 .....	5.00	3.95	2.73	1.65	0.85	0.70	0.53	89
30-34 .....	5.66	4.18	2.66	1.91	0.99	0.96	0.87	85
35-39 .....	6.90	5.27	3.85	2.03	1.79	1.33	1.14	84
40-44 .....	7.85	4.99	4.10	3.48	2.56	1.80	2.13	73
45-49 .....	8.20	6.42	5.80	4.59	3.65	3.03	3.29	60
50-54 .....	10.83	9.18	8.06	7.09	5.88	5.22	4.99	
55-59 .....	14.08	10.65	11.24	10.33	9.04	7.82	7.59	46
60-64 .....	20.45	18.07	17.68	14.97	14.06	12.74	12.82	37
65-69 .....	35.51	33.15	27.16	25.22	23.01	21.05	20.39	43
70-74 .....	53.80	46.20	42.19	42.17	40.35	35.52	35.36	34
75-79 .....	87.96	83.56	75.53	72.07	72.20	58.28	60.81	31
80-84 .....	126.07	131.63	121.15	121.57	109.92	108.61	100.52	20
85 and over .....	222.58	232.84	233.59	214.35	215.80	199.38	183.88	17
All ages .....	10.25	9.00	8.23	9.19	8.31	7.38	7.42	28

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Average annual number of deaths per 1,000 of population at ages shown.

Over the period there was a marked reduction in death rates with greater reduction in female than in male rates in all but the age group five to nine.

## CAUSES OF DEATH

The classification of causes of deaths in Australia since 1907 has been based on International Lists of Causes of Deaths. From time to time revisions to these lists have affected the comparability of the figures. Up to 1949 the effect of these revisions had been negligible but the introduction in 1950 of the Sixth Revision of the International Statistical Classification introduced major changes in the classification which, together with the adoption of more flexible rules for selecting the underlying cause where certificates of cause of death showed more than one cause, affected the comparability of figures for years before 1950 with those for 1950 and later. A complete classification of causes of deaths for each State and Territory of Australia for 1950 according to both the Fifth and Sixth Revisions was published by the Commonwealth Statistician in Demography 1950, Bulletin No. 68.

The Seventh Revision adopted in Australia in 1958 did not affect comparability significantly. International Classification Seventh Revision code numbers have been shown where appropriate in the tables which follow.

In the following table deaths registered in 1967 are shown classified according to the abbreviated list of the Seventh Revision together with the percentage from each cause and the rate per 10,000 of mean population.

## Causes of Deaths, South Australia, 1967

Abbreviated Classification (a)	International Classification Code Number	Number of Deaths	Proportion of Total	Rate per 10,000 of Mean Population
			%	
1 Tuberculosis of respiratory system...	001-008	23	0.26	0.21
2 Tuberculosis, other forms .....	010-019	3	0.03	0.03
3 Syphilis and its sequelae .....	020-029	1	0.01	0.01
6 Dysentery, all forms .....	045-048	3	0.03	0.03
9 Whooping cough .....	056	1	0.01	0.01
10 Meningococcal infections .....	057	1	0.01	0.01
14 Measles .....	085	2	0.02	0.02
17 Other infective and parasitic diseases	(b)	22	0.24	0.20
18 Malignant neoplasms .....	140-205	1,504	16.58	13.53
19 Benign and unspecified neoplasms ..	210-239	17	0.19	0.15
20 Diabetes mellitus .....	260	154	1.70	1.39
21 Anaemias .....	290-293	25	0.28	0.22
22 Vascular lesions affecting central nervous system	330-334	1,246	13.74	11.21
23 Non-meningococcal meningitis .....	340	12	0.13	0.11
25 Chronic rheumatic heart disease ....	410-416	55	0.61	0.49
26 Arteriosclerotic and degenerative heart disease .....	420-422	3,032	33.43	27.27
27 Other diseases of heart .....	430-434	228	2.51	2.05
28 Hypertension with heart disease ....	440-443	117	1.29	1.05
29 Hypertension without mention of heart .....	444-447	37	0.41	0.33
30 Influenza .....	480-483	2	0.02	0.02
31 Pneumonia .....	490-493	262	2.89	2.37
32 Bronchitis .....	500-502	196	2.16	1.76
33 Ulcer of stomach and duodenum ....	540, 541	50	0.55	0.45
34 Appendicitis .....	550-553	7	0.08	0.06
35 Intestinal obstruction and hernia ...	560, 561, 570	53	0.58	0.48
36 Gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn	543, 571, 572	44	0.48	0.40
37 Cirrhosis of liver .....	581	66	0.73	0.59
38 Nephritis and nephrosis .....	590-594	69	0.76	0.62
39 Hyperplasia of prostate .....	610	34	0.37	0.30
40 Complications of pregnancy, childbirth, and the puerperium .....	640-689	4	0.04	0.04
41 Congenital malformations .....	750-759	101	1.11	0.91
42 Birth injuries, postnatal asphyxia, and atelectasis .....	760-762	59	0.65	0.53
43 Infections of the newborn .....	763-768	5	0.06	0.04
44 Other diseases peculiar to early infancy, and immaturity unqualified	769-776	127	1.40	1.14
45 Senility without mention of psychosis, ill-defined and unknown causes ..	780-795	74	0.82	0.67
46 All other diseases .....	Residual	737	8.12	6.63
47 Motor vehicle accidents .....	E810-E835	281	3.10	2.53
48 All other accidents .....	E800-E802, E840-E962	255	2.81	2.29
49 Suicide and self-inflicted injury .....	E963, E970-E979	145	1.60	1.30
50 Homicide and operations of war ....	E964, E965, E980-E999	17	0.19	0.15
Total all causes .....		9,071	100.00	81.60

(a) No deaths were recorded in 1967 in the following categories—4 Typhoid fever (040), 5 Cholera (043), 7 Scarlet fever and streptococcal sore throat (050, 051), 8 Diphtheria (055), 11 Plague (058), 12 Acute poliomyelitis (080), 13 Smallpox (084), 15 Typhus and other rickettsial diseases (100-108), 16 Malaria (110-117), 24 Rheumatic fever (400-402).

(b) Includes No. 030-039, 041, 042, 044, 049, 052-054, 059-074, 081-083, 086-096, 120-138.

The following table shows for 1967 the main causes of deaths in selected age groups.

**Main Causes of Deaths in Age Groups, South Australia, 1967**

International Classification Number	Age Group and Cause of Death	Deaths	Pro- portion of Total Deaths in Age Groups	Pro- portion of Total Deaths from the Specified Cause
		No.	%	%
	<b>0-4 Years</b>			
750-759	Congenital malformations .....	84	21.3	83.2
774-776	Immaturity .....	50	12.7	100.0
760, 761	Birth injuries .....	33	8.4	100.0
480-502, 763	Pneumonia, bronchitis and influenza....	29	7.4	6.2
762	Post-natal asphyxia and atelectasis .....	26	6.6	100.0
800-999	Accidental and violent deaths.....	25	6.3	3.6
	Other causes .....	147	37.3	
	<b>5-14 Years</b>			
800-999	Accidental and violent deaths .....	41	49.4	5.9
140-205	Cancer (all forms) .....	18	21.7	1.2
480-502	Pneumonia, bronchitis and influenza....	5	6.0	1.1
750-759	Congenital malformations .....	4	4.8	4.0
	Other causes .....	15	18.1	
	<b>15-24 Years</b>			
800-999	Accidental and violent deaths .....	124	68.5	17.8
140-205	Cancer (all forms) .....	23	12.7	1.5
410-443	Diseases of the heart .....	5	2.8	0.1
	Other causes .....	29	16.0	
	<b>25-34 Years</b>			
800-999	Accidental and violent deaths .....	56	50.0	8.0
140-205	Cancer (all forms) .....	17	15.2	1.1
410-443	Diseases of the heart .....	8	7.1	0.2
480-502	Pneumonia, bronchitis and influenza....	4	3.6	1.0
	Other causes .....	27	24.1	
	<b>35-44 Years</b>			
800-999	Accidental and violent deaths .....	89	28.8	12.8
410-443	Diseases of the heart .....	70	22.7	2.0
140-205	Cancer (all forms) .....	69	22.3	4.6
330-334	Vascular lesions affecting central nervous system .....	12	3.9	1.0
480-502	Pneumonia, bronchitis and influenza....	4	1.3	1.0
	Other causes .....	65	21.0	
	<b>45-54 Years</b>			
410-443	Diseases of the heart .....	269	36.7	7.8
140-205	Cancer (all forms) .....	203	27.7	13.5
800-999	Accidental and violent deaths .....	87	11.9	12.5
330-334	Vascular lesions affecting central nervous system .....	48	6.6	3.9
480-502	Pneumonia, bronchitis and influenza....	19	2.6	4.1
	Other causes .....	106	14.5	
	<b>55-64 Years</b>			
410-443	Diseases of the heart .....	563	41.3	16.4
140-205	Cancer (all forms) .....	349	25.6	23.2
330-334	Vascular lesions affecting central nervous system .....	137	10.1	11.0
800-999	Accidental and violent deaths .....	67	4.9	9.6
480-502	Pneumonia, bronchitis and influenza....	53	3.9	11.5
	Other causes .....	194	14.2	

International Classification Number	Age Group and Cause of Death	Deaths	Proportion of Total Deaths in Age Groups	Proportion of Total Deaths from the Specified Cause
		No.	%	%
	<b>65-74 Years</b>			
410-443	Diseases of the heart .....	943	44.3	27.5
140-205	Cancer (all forms) .....	389	18.3	25.9
330-334	Vascular lesions affecting central nervous system .....	321	15.1	25.8
480-502	Pneumonia, bronchitis and influenza ....	95	4.5	28.6
800-999	Accidental and violent deaths .....	72	3.4	10.3
450-456	Diseases of the arteries .....	43	2.0	17.5
	Other causes .....	265	12.4	
	<b>75 Years and Over</b>			
410-443	Diseases of the heart .....	1,572	41.7	45.8
330-334	Vascular lesions affecting central nervous system .....	723	19.2	58.0
140-205	Cancer (all forms) .....	429	11.4	28.5
480-502	Pneumonia, bronchitis and influenza ....	248	6.6	53.9
450-456	Diseases of the arteries .....	172	4.6	70.0
800-999	Accidental and violent deaths .....	137	3.6	19.6
	Other causes .....	488	12.9	

Mortality in early childhood has been reduced considerably over the years mainly by improved preventive measures and the use of new drugs. This improvement has increased the number of persons reaching higher ages where the risk from degenerative diseases is greatest; consequently deaths from degenerative diseases now constitute a higher proportion of deaths than formerly.

### Infectious Diseases

Deaths from certain infectious diseases over the period 1915 to 1967 are shown in the following table.

#### Deaths from Certain Infectious Diseases, South Australia

Period	Respiratory Tuberculosis (001-008)	Typhoid Fever (040)	Scarlet Fever (050)	Diphtheria (055)	Whooping Cough (056)	Acute Poliomyelitis (080)	Measles (085)
<b>Annual Average</b>							
1915-19 .....	339	311	4	94	21	(a)	14
1920-24 .....	330	28	9	70	28	9	7
1925-29 .....	313	12	2	25	13	3	12
1930-34 .....	261	7	2	12	13	3	6
1935-39 .....	211	4	1	27	11	6	2
1940-44 .....	190	3	2	30	10	2	9
1945-49 .....	161	1	1	7	8	9	6
1950-54 .....	81	—	—	1	2	23	3
1955-59 .....	43	—	—	1	1	2	3
1960-64 .....	32	—	—	—	1	1	2
1965-67 .....	16	—	—	—	—	—	1

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Not separately recorded.

In 1956 a poliomyelitis immunisation programme was begun and since then the incidence of and deaths from this disease have declined (see Part 6.5).

There has been a long-term downward trend in deaths from respiratory tuberculosis. This has been assisted by the introduction in March 1952 of compulsory chest X-ray surveys of the population, enabling early detection and therefore more effective treatment of the disease. Of those diseases shown in the preceding table, in 1967 there were twenty-three deaths from respiratory tuberculosis, two from measles and one from whooping cough.

The decline in the incidence of deaths from infectious diseases is due to several factors, the more important being advances in medical science, improved hygiene and the general acceptance of immunisation of infants and young children against such diseases as diphtheria and whooping cough.

### Diseases of the Heart

The following table shows the number of deaths attributed to heart disease and rates per 10,000 of the mean population since 1920.

#### Deaths from Diseases of the Heart (410-443), South Australia

Period	Number of Deaths			Death Rate (a)		
	Males	Females	Persons	Males	Females	Persons
<b>Annual Average</b>						
1920-24 .....	292	249	541	11.52	9.87	10.70
1925-29 .....	314	276	590	11.08	9.95	10.52
1930-34 .....	438	368	806	15.10	12.78	13.94
1935-39 .....	639	498	1,137	21.63	16.88	19.25
1940-44 .....	886	704	1,590	29.29	23.02	26.14
1945-49 .....	1,094	822	1,916	33.84	25.15	29.47
1950-54 .....	1,342	996	2,338	35.22	26.70	31.01
1955-59 .....	1,519	1,111	2,630	34.38	25.81	30.15
1960-64 .....	1,776	1,245	3,021	35.61	25.42	30.56
<b>Year</b>						
1963 .....	1,848	1,166	3,014	36.39	23.31	29.90
1964 .....	1,964	1,390	3,354	37.72	27.04	32.41
1965 .....	1,927	1,384	3,311	36.02	26.16	31.12
1966 .....	2,065	1,461	3,526	37.65	26.90	32.30
1967 .....	1,996	1,436	3,432	35.73	25.96	30.87

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Number of deaths per 10,000 of mean population.

The percentage of total deaths classified to heart disease has increased from 11.0 per cent in the period 1920-24 to 36.9 per cent during 1960-64 and over the same period the rate has increased from 10.7 to 30.6. However, apart from the effect of the ageing population, there are other difficult-to-measure factors which have influenced this large increase, viz changes in the mode of certification and classification, and improvement both in diagnosis and certification; therefore a comparison of numbers, rates and percentages of deaths from this cause over the period should be made with caution.

### Malignant Neoplasms

For 1950 and subsequent years, deaths from malignant neoplasms (*i.e.* cancer) include those deaths classified to neoplasms of lymphatic and haematopoietic tissues (including Hodgkin's disease, leukaemia and aleukaemia)—there were 124 so assigned in 1967.

## Deaths from Malignant Neoplasms (140-205), South Australia

Period	Number of Deaths			Death Rate (a)		
	Males	Females	Persons	Males	Females	Persons
<b>Annual Average</b>						
1930-34 .....	325	328	653	11.23	11.37	11.30
1935-39 .....	348	362	710	11.77	12.26	12.02
1940-44 .....	363	409	772	12.02	13.35	12.69
1945-49 .....	416	424	840	12.88	12.97	12.92
1950-54 .....	462	483	945	12.11	12.96	12.53
1955-59 .....	565	519	1,084	12.79	12.06	12.43
1960-64 .....	656	617	1,273	13.16	12.58	12.88
<b>Year</b>						
1963 .....	668	616	1,284	13.16	12.31	12.74
1964 .....	723	644	1,367	13.88	12.53	13.21
1965 .....	722	661	1,383	13.50	12.50	13.00
1966 .....	796	649	1,445	14.51	11.95	13.24
1967 .....	804	700	1,504	14.39	12.66	13.53

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Number of deaths per 10,000 of mean population.

The table indicates a steady increase in deaths from this cause and the table of age-specific death rates which follows shows how the rate increases with age. Therefore, the increase over the period in the rate at all ages is partly due to the increasing proportion of the population in the higher age groups. Periods shown below are those spanning six censuses.

## Malignant Neoplasms (140-205): Age-Specific Death Rates, South Australia

Age Group	Death Rate (a)					
	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67
	MALES					
0-4 .....	0.97	—	0.49	1.18	1.02	1.15
5-14 .....	0.39	0.12	0.51	1.05	0.82	0.97
15-24 .....	0.33	0.31	0.07	1.64	0.86	0.90
25-34 .....	0.89	1.05	1.18	1.21	1.33	1.58
35-44 .....	3.48	3.36	2.57	4.63	4.29	3.73
45-54 .....	13.08	8.65	12.35	10.42	11.57	15.12
55-64 .....	37.75	35.41	32.77	33.43	36.52	43.46
65-74 .....	87.18	89.18	82.62	69.54	83.67	87.47
75 and over .....	109.91	147.57	148.98	149.45	142.29	151.37
All ages .....	9.48	11.40	13.60	12.54	12.86	14.11
	FEMALES					
0-4 .....	0.38	0.30	0.41	1.24	0.79	0.57
5-14 .....	0.39	0.13	0.23	0.34	0.79	0.56
15-24 .....	0.49	0.25	0.40	0.72	0.46	0.82
25-34 .....	1.09	1.49	1.74	1.99	2.16	1.70
35-44 .....	6.04	6.32	4.42	5.95	6.66	5.69
45-54 .....	17.53	16.86	15.39	12.67	16.69	16.17
55-64 .....	32.56	34.61	30.12	32.91	28.19	30.38
65-74 .....	63.69	55.98	57.21	52.26	52.24	49.96
75 and over .....	104.61	115.15	108.52	98.41	99.76	94.66
All ages .....	9.03	11.37	13.12	12.64	12.68	12.33

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Average annual number of deaths per 10,000 of population at ages shown.

Deaths from malignant neoplasms in 1967 according to the site of the disease, sex, and in broad age groups are shown in the following table.

**Malignant Neoplasms: Deaths Classified by Site and Sex in Age Groups  
South Australia, 1967**

Site of Disease	Sex	Age Group				All Ages
		Under 25	25-44	45-64	65 and Over	
Malignant neoplasm of :						
Buccal cavity and pharynx (140-148) .....	M	—	—	12	9	21
	F	—	—	3	6	9
Digestive organs and peritoneum (150-159).....	M	1	11	90	148	250
	F	—	9	65	187	261
Respiratory system (160-165) ..	M	—	4	106	112	222
	F	—	3	12	20	35
Breast (170) .....	M	—	—	—	2	2
	F	—	17	71	58	146
Uterus (171-174) .....	F	1	2	27	32	62
Other female genital organs (175-176) .....	F	1	4	25	16	46
Male genital organs (177-179)..	M	3	2	6	79	90
Urinary organs (180, 181) ....	M	1	—	16	31	48
	F	1	1	4	11	17
Skin (190, 191) .....	M	1	5	9	9	24
	F	—	3	9	6	18
Brain and nervous system (193)	M	5	8	14	6	33
	F	2	1	11	3	17
Other and unspecified sites (192, 194-199) .....	M	5	—	19	18	42
	F	6	2	8	21	37
Neoplasms of lymphatic and haematopoietic tissues (200-205) .....	M	11	10	24	27	72
	F	10	4	21	17	52
Total (140-205) .....	M	27	40	296	441	804
	F	21	46	256	377	700

**Vascular Lesions Affecting Central Nervous System**

The increase in both numbers and rates of deaths from vascular lesions of the central nervous system (commonly referred to as a 'stroke') is further evidence of the effect of the increased proportion of the population at higher ages. Although the rate generally has fallen since 1954, deaths from this cause still constituted in 1967 over 19 per cent of deaths of persons aged seventy-five years and over. During the period 1920-24 deaths classified to this cause were only 6.7 per cent of all deaths, but during 1960-64 they were 13.9 per cent of all deaths.

## Deaths from Vascular Lesions Affecting Central Nervous System (330-334)

## South Australia

Period	Number of Deaths			Death Rate (a)		
	Males	Females	Persons	Males	Females	Persons
<b>Annual Average</b>						
1920-24 .....	166	162	328	6.55	6.42	6.49
1925-29 .....	171	188	359	6.03	6.80	6.41
1930-34 .....	201	231	432	6.94	8.01	7.47
1935-39 .....	231	294	525	7.84	9.95	8.90
1940-44 .....	271	368	639	8.96	12.03	10.51
1945-49 .....	321	431	752	9.92	13.21	11.57
1950-54 .....	404	553	957	10.62	14.82	12.70
1955-59 .....	481	614	1,095	10.89	14.27	12.55
1960-64 .....	490	645	1,135	9.83	13.16	11.48
<b>Year</b>						
1963 .....	490	645	1,135	9.65	12.89	11.26
1964 .....	505	692	1,197	9.70	13.46	11.57
1965 .....	548	695	1,243	10.24	13.14	11.68
1966 .....	564	739	1,303	10.28	13.61	11.94
1967 .....	560	686	1,246	10.02	12.40	11.21

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Number of deaths per 10,000 of mean population.

## INFANT MORTALITY

The infant mortality rate, *i.e.* the number of deaths of children under one year to every 1,000 live births, has shown a marked decline from 148.77 in 1875-79 to 19.17 in 1960-64, and the rate of 16.27 in 1968 was the lowest ever recorded in this State. Many factors have contributed to the remarkable improvement in the infant mortality rate, principally measures taken (both legislative and educative) to control preventable diseases and the provision of facilities by the Mothers and Babies Health Association for the promotion of child health.

The rate for male infant deaths is consistently higher than for female infant deaths.

## Infant Deaths, South Australia

Year	Number of Deaths			Death Rate (a)		
	Males	Females	Persons	Males	Females	Persons
1964....	232	165	397	21.38	16.47	19.03
1965....	224	161	385	20.78	15.92	18.43
1966....	222	134	356	21.07	13.70	17.52
1967....	187	159	346	17.97	15.93	16.97
1968....	198	147	345	18.08	14.33	16.27

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Number of infant deaths per 1,000 live births.

Improvement has been much greater for deaths of infants a week or more old than for those under one week. However, to a large extent the factors influencing mortality in these two groups are different. Deaths of infants under one week mainly can be related to pre-natal causes which also have a bearing on still



births. Combinations of still birth rates and rates of infant mortality to various ages have been shown in the following table which commences at the first five-yearly period after the introduction of compulsory registration of still births in South Australia. These figures give a clearer indication of the improvement which has been effected in the saving of life.

### Infant Mortality and Still Births, South Australia

Period	Still Births Plus Deaths Under 1 Week		Still Births Plus Deaths Under 1 Month		Still Births Plus Deaths Under 1 Year	
	Number	Rate (a)	Number	Rate (a)	Number	Rate (a)
<b>Annual Average</b>						
1940-44 ..	495	41.07	558	46.30	716	59.40
1945-49 ..	613	38.35	668	41.79	798	49.92
1950-54 ..	533	29.44	578	31.92	704	38.88
1955-59 ..	503	25.46	543	27.49	689	34.88
1960-64 ..	510	23.54	551	25.44	679	31.35
<b>Year</b>						
1964.....	503	23.82	529	25.05	649	30.73
1965.....	487	23.03	519	24.54	641	30.31
1966.....	438	21.31	470	22.86	593	28.85
1967.....	423	20.54	452	21.94	557	27.04
1968 (b)...	442	20.63	472	22.03	561	26.19

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

(a) Per 1,000 of all births (live and still).

(b) Figures of still births derived from perinatal death certificates.

The table which follows shows infant mortality rates in age groups since 1905.

### Infant Mortality Rates: Age Groups, South Australia

Period	Number of Deaths per 1,000 Live Births at Ages :					Total Under 12 Months
	Under 1 Week	1 Week and Under 1 Month	1 Month and Under 3 Months	3 Months and Under 6 Months	6 Months and Under 12 Months	
<b>Annual Average</b>						
1905-09 ..	27.68		11.54	12.40	17.21	68.83
1910-14 ..	28.55		10.81	12.50	15.96	67.82
1915-19 ..	29.88		8.80	9.41	13.76	61.85
1920-24 ..	19.82	8.86	8.26	8.94	12.57	58.45
1925-29 ..	20.35	6.73	5.66	5.93	7.87	46.54
1930-34 ..	18.69	4.89	4.12	4.23	6.12	38.05
1935-39 ..	17.81	3.98	3.65	2.88	4.54	32.86
1940-44 ..	15.75	5.37	4.60	3.83	5.02	34.57
1945-49 ..	15.50	3.52	2.88	2.44	3.01	27.35
1950-54 ..	13.08	2.53	2.25	2.08	2.75	22.69
1955-59 ..	11.79	2.06	2.45	2.42	2.65	21.37
1960-64 ..	11.25	1.93	1.93	1.99	2.07	19.17
<b>Year</b>						
1964.....	12.03	1.25	2.06	2.06	1.63	19.03
1965.....	11.06	1.53	1.92	1.77	2.15	18.43
1966.....	9.89	1.57	2.07	2.02	1.97	17.52
1967.....	10.40	1.42	1.57	2.01	1.57	16.97
1968.....	10.66	1.41	1.18	1.32	1.70	16.27

NOTE: Deaths of full-blood Aborigines where identified in registrations were excluded before 1967.

The causes of infant deaths in 1967 classified according to age group are shown in the following table.

**Infant Mortality: Causes in Age Groups, South Australia, 1967**

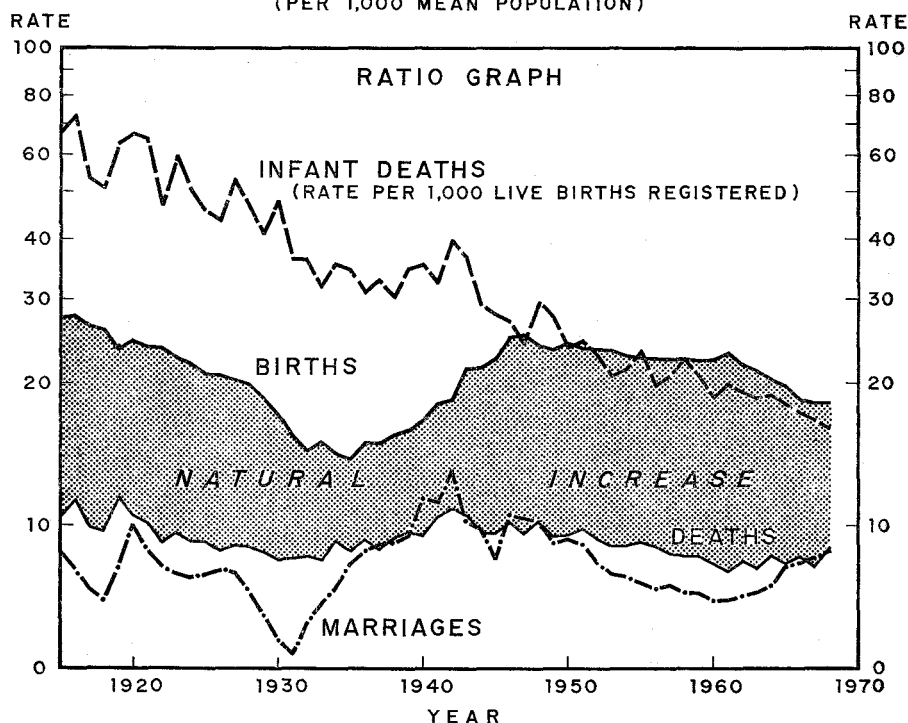
Cause of Death	Age Group					Total Under 12 Months
	Under 1 Week	1 Week and Under 1 Month	1 Month and Under 3 Months	3 Months and Under 6 Months	6 Months and Under 12 Months	
Infective and parasitic diseases (001-138) .....	—	—	1	1	3	5
Diseases of the nervous system and sense organs (330-398) .....	1	4	4	1	4	14
Diseases of the respiratory system (including pneumonia of newborn) (470-527, 763) .....	4	—	3	15	7	29
Intestinal obstruction and hernia (560, 561, 570) .....	1	—	—	—	—	1
Gastro-enteritis and colitis (including diarrhoea of newborn) (571, 764) .....	—	—	1	4	3	8
Congenital malformations (750-759) .....	35	15	18	8	4	80
Birth injuries (760, 761) .....	31	2	—	—	—	33
Post-natal asphyxia and atelectasis (762) .....	25	1	—	—	—	26
Immaturity (774-776) (a) .....	49	1	—	—	—	50
Other diseases peculiar to early infancy (765-773) .....	63	4	3	5	3	78
All other diseases .....	2	1	—	5	2	10
Accidents, poisonings, violence (E800-E999) .....	1	2	2	2	5	12
Total all causes .....	212	30	32	41	31	346

(a) Immaturity unqualified or with mention of any other subsidiary condition not classified as peculiar to early infancy.

## VITAL STATISTICS RATES

SOUTH AUSTRALIA 1915 TO 1968

(PER 1,000 MEAN POPULATION)



## EXPECTATION OF LIFE

The expectation of life at age  $x$  is defined as the average number of years lived after age  $x$  by each of a group of persons aged exactly  $x$  years. Because detailed information of the age structure and mortality experience of the population is required, the calculation of the expectation of life for each age is generally based on a period which spans a population census (the only time at which a sufficiently accurate age distribution is available).

The table which follows shows the expectation of life at specified ages in Australia based on mortality experience during each of the two decades to 1910 and for the three years spanning each of the Censuses of 1921, 1933, 1947, 1954 and 1961.

## Expectation of Life, Australia

Age	1891-1900	1901-10	1920-22	1932-34	1946-48	1953-55	1960-62
MALES							
0.....	51.1	55.2	59.2	63.5	66.1	67.1	67.9
5.....	55.6	57.9	60.4	62.6	63.8	64.3	64.8
10.....	51.4	53.5	56.0	58.0	59.0	59.5	59.9
15.....	47.0	49.0	51.4	53.4	54.3	54.7	55.1
20.....	42.8	44.7	47.0	48.8	49.6	50.1	50.4
25.....	38.9	40.6	42.7	44.4	45.0	45.5	45.8
30.....	35.1	36.5	38.4	39.9	40.4	40.9	41.1
35.....	31.3	32.5	34.2	35.5	35.8	36.3	36.5
40.....	27.7	28.6	30.1	31.1	31.2	31.7	31.8
45.....	24.0	24.8	26.0	26.9	26.8	27.2	27.4
50.....	20.5	21.2	22.2	22.8	22.7	22.9	23.1
55.....	17.1	17.7	18.5	19.0	18.8	19.0	19.2
60.....	14.0	14.3	15.1	15.6	15.4	15.5	15.6
65.....	11.3	11.3	12.0	12.4	12.3	12.3	12.5
70.....	8.9	8.7	9.3	9.6	9.6	9.6	9.8
75.....	6.7	6.6	6.9	7.2	7.2	7.3	7.5
80.....	5.0	5.0	5.0	5.2	5.4	5.5	5.6
FEMALES							
0.....	54.8	58.8	63.3	67.1	70.6	72.8	74.2
5.....	58.6	60.8	63.6	65.6	67.9	69.6	70.8
10.....	54.5	56.4	59.2	61.0	63.1	64.8	65.9
15.....	50.0	51.9	54.6	56.3	58.3	59.9	61.0
20.....	45.7	47.5	50.0	51.7	53.5	55.1	56.2
25.....	41.7	43.4	45.7	47.2	48.7	50.2	51.3
30.....	37.9	39.3	41.5	42.8	44.1	45.4	46.5
35.....	34.1	35.4	37.3	38.4	39.5	40.7	41.7
40.....	30.5	31.5	33.1	34.0	34.9	36.0	37.0
45.....	26.7	27.6	29.0	29.7	30.5	31.4	32.3
50.....	22.9	23.7	24.9	25.6	26.1	27.0	27.9
55.....	19.3	19.9	21.0	21.6	22.0	22.8	23.6
60.....	15.9	16.2	17.2	17.7	18.1	18.8	19.5
65.....	12.7	12.9	13.6	14.2	14.4	15.0	15.7
70.....	9.9	10.0	10.4	11.0	11.1	11.6	12.2
75.....	7.4	7.6	7.7	8.2	8.3	8.7	9.2
80.....	5.5	5.7	5.6	6.0	6.0	6.3	6.7

Generally, the figures shown in the table indicate that the number of years which people of all ages in Australia can expect to live has increased steadily since the turn of the century.

## 5.4 MIGRATION

### History of Migration

Since the early settlement of the colony of South Australia, increases in the population from migration have occurred in times of increased economic activity while loss of population has occurred in times of depression in this State and/or increased economic activity elsewhere.

The discovery of minerals in other States attracted many South Australians. The first major exodus came with the discovery of gold in Victoria in 1851, followed in 1884, by a movement across the border into New South Wales to the newly opened silver-lead mines at Broken Hill. The third exodus of people from the State was due to the discovery of gold at Kalgoorlie in Western Australia in the 1890s.

Since 1901 immigrants have entered Australia and South Australia in four distinct phases of the assisted migration plan. It is estimated that during the period 1901 to 1952, after making allowances for war losses and those assisted migrants who did not, in the end, remain in Australia, the net number of 'assisted' migrants was about twice the number of 'unassisted'.

Assisted migration was resumed about 1906 as more stable economic conditions followed the depression years which marked the beginning of the century. Immigration gained impetus during the years 1910 to 1912 but the movement was interrupted by war in 1914. After the war, the resumption of assisted migration was accompanied by a flow of unassisted migrants greater than for many decades. This movement was halted by the depression of the 1930s and when reintroduced in 1939 was almost immediately stopped by the outbreak of war in September. In the immediate post-war years, assisted migration was again resumed and the numbers brought to Australia were far greater than for any other comparable period.

South Australia suffered a substantial loss of population through migration in the period from 1928 to the mid-1930s.

### Regulation of Immigration Into Australia

Under the Commonwealth Constitution, the Parliament of the Commonwealth is empowered to make laws with respect to immigration, emigration, aliens and the influx of criminals.

Immigration into Australia is regulated by the *Migration Act* 1958-1966 which came into force on 1 June 1959, and repealed the *Immigration Act* 1901-1949 and the *Aliens Deportation Act* 1948.

The *Aliens Act* 1947-1966 provides that a register of aliens shall be maintained for every State or mainland Territory of the Commonwealth. Unless exempted, aliens sixteen years of age and over are required to register with the Department of Immigration. There were 41,817 aliens registered in South Australia and 11,475 alien children under sixteen years of age at 31 December 1968.

Legislation and conditions of immigration into Australia are discussed in detail in the *Official Year Book of the Commonwealth of Australia*.

### Overseas Arrivals and Departures

Since 1924 the movements of overseas travellers have been classified according to declared intention regarding residence into two main categories, short term and long term (including permanent). For short term movements, overseas visitors and Australian residents are identified separately.

The principal categories of travellers according to stated purpose of travel are as follows:

*Permanent movement*; consisting of persons arriving with stated intent to settle permanently in Australia, and Australian residents departing with stated intent to reside permanently abroad.

*Long term movement*; consisting of the arrival of visitors and the departure of residents with stated intent to stay (in Australia or in a country abroad respectively) for twelve months or more.

*Short term movement*; consisting of all other movements, including the movement of Australian troops irrespective of period of stay.

Separate figures for permanent and long term movements are not available on a State basis; hence these movements are combined in the table below showing overseas arrivals at, and departures from, South Australia. This table does not include persons who disembarked in other ports in Australia and subsequently settled in South Australia or South Australians who embarked from other ports for overseas.

**Overseas Arrivals and Departures, State of Embarkation/Disembarkation,  
South Australia  
Intended Term of Residence**

Year	Long Term and Permanent		Short Term				Total		
			Australian Residents		Visitors				
	Males	Females	Males	Females	Males	Females	Males	Females	Persons
ARRIVALS									
1959....	3,455	3,264	572	469	601	202	4,628	3,935	8,563
1960....	2,990	2,786	671	592	446	218	4,107	3,596	7,703
1961....	3,443	3,365	469	437	465	159	4,377	3,961	8,338
1962....	2,526	2,542	588	624	619	240	3,733	3,406	7,139
1963....	3,275	3,287	671	739	577	296	4,523	4,322	8,845
1964....	5,019	5,101	650	686	632	282	6,301	6,069	12,370
1965....	3,720	3,945	594	692	560	358	4,874	4,995	9,869
1966....	3,739	3,857	729	820	583	367	5,051	5,044	10,095
1967....	2,315	2,352	634	810	537	315	3,486	3,477	6,963
1968....	2,400	2,455	729	511	772	308	3,901	3,274	7,175
DEPARTURES									
1959....	1,460	1,123	807	621	673	256	2,940	2,000	4,940
1960....	1,541	1,299	1,211	1,024	621	263	3,373	2,586	5,959
1961....	1,368	1,155	1,226	980	533	233	3,127	2,368	5,495
1962....	1,470	1,339	914	831	717	303	3,101	2,473	5,574
1963....	1,677	1,520	913	901	682	338	3,272	2,759	6,031
1964....	1,724	1,653	1,087	1,131	815	470	3,626	3,254	6,880
1965....	2,010	2,155	1,876	1,411	708	546	4,594	4,112	8,706
1966....	2,358	2,275	1,345	1,504	850	687	4,553	4,466	9,019
1967....	2,002	1,972	1,793	1,139	796	520	4,591	3,631	8,222
1968....	1,951	1,964	1,612	1,009	919	457	4,482	3,430	7,912

NOTE: Crew members and 'through' passengers (i.e. persons remaining on board a ship while in Australian waters or travelling in an aircraft passing through Australia) are excluded.

The number of long-term and permanent arrivals in 1964 (10,120) and departures in 1966 (4,633) were the highest ever recorded in South Australia.

Revised questions for travellers introduced in 1958 have permitted the separation of permanent from other long term movements, and also the identification of former settlers departing among the permanent departures. This information, shows that in 1968 there were 23,814 former settlers leaving

Australia who stated that they were departing permanently. Of these 15,031 intended to settle in the United Kingdom or Ireland, 1,641 in New Zealand, 1,755 in other Commonwealth countries, 3,263 in European foreign countries and 1,379 in the United States of America. Other residents departing permanently totalled 7,861, of whom 1,647 intended to settle in the United Kingdom or Ireland, 1,462 in New Zealand, 1,279 in Papua and New Guinea and 1,404 in other Commonwealth countries.

### **Assisted Migration**

Resumption of migration was the subject of negotiation between the Commonwealth and British Governments towards the end of 1945, and two agreements were signed in March 1946. These agreements, which came into operation on 31 March 1947, provided for free and assisted passages to be granted to British residents desirous of settling in Australia. The Free Passage Agreement, which applied to British ex-servicemen and their dependants was terminated in February 1955. From April 1949, the Assisted Passage Agreement continued in operation under renewal from time to time, and was renewed for five years from 1 April 1967.

Under the existing financial arrangements, the British Government's contribution towards the Assisted Passage Scheme is decided when the agreement is extended, and for the five years from April 1967, was fixed at a maximum amount of \$375,000 a year.

The number of British migrants who came to Australia under the Free and Assisted Passage Agreements during the period January 1947 to June 1968 totalled 792,157 and 96,065 of these stated at the time that their proposed destination was South Australia. Included in the Australian total shown above were 198,501 Commonwealth nominees who comprised workers selected against known and assessed employment demands in Australia.

Since the commencement of the assisted passage schemes in 1947, the migration of unaccompanied children and youths from Britain has been encouraged under the auspices of approved voluntary organisations.

An agreement to settle displaced persons in Australia was made with the International Refugee Organisation in July 1947. Migration schemes have been entered into with the governments of other countries including the Netherlands and Italian schemes in 1951, the German, Austrian, and Greek schemes in 1952, and others. The most recent was an agreement reached with the government of Turkey in October 1967.

### **Citizenship and Naturalisation**

The *Nationality and Citizenship Act* 1948 came into force on Australia Day, 26 January 1949, and repealed all previous Commonwealth legislation on this subject. The most significant effect of the Act was the creation for the first time of the status of 'Australian Citizen'. In this respect the Act was complementary to citizenship legislation passed or about to be passed by other countries of the Commonwealth of Nations. All Australian citizens, and the citizens of other countries of the Commonwealth of Nations are declared to be British subjects.

## Nationality of Persons Naturalised, South Australia

Nationality	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Austrian .....	31	114	127	221	112	89	107	95	44	58
Czechoslovakian ...	63	32	20	50	22	11	28	27	10	22
Dutch .....	603	643	440	907	578	607	836	696	619	494
Estonian .....	61	48	16	35	8	12	16	16	9	5
German .....	901	1,244	737	1,094	519	442	614	554	452	372
Greek .....	311	804	555	882	481	636	472	556	445	710
Hungarian .....	91	99	66	348	243	154	164	158	81	81
Italian .....	1,282	1,365	1,033	1,574	886	729	986	1,287	1,049	893
Latvian .....	291	190	84	133	47	44	50	51	19	25
Lithuanian .....	137	74	65	54	24	25	28	14	14	10
Polish .....	845	513	303	424	279	172	304	355	198	151
Russian .....	32	23	16	39	51	30	53	72	43	43
Ukrainian .....	318	193	86	127	89	56	44	67	26	23
Yugoslavian .....	287	237	181	279	243	233	340	390	219	307
Stateless .....	49	66	34	63	34	50	61	27	79	50
Other .....	130	150	83	233	133	165	186	171	140	202
Total ....	5,432	5,795	3,846	6,463	3,749	3,455	4,289	4,536	3,447	3,446

There were 3,036 naturalisation certificates granted in 1967 and 3,041 in 1968. Each certificate covers the person being naturalised and his/her children under the *Nationality and Citizenship Act 1948-1967*.

## 5.5 CHARACTERISTICS OF THE POPULATION

Statistics relating to characteristics of the population of South Australia are derived from information obtained at each population census. At the 1966 Census, these characteristics included the sex distribution, age distribution and the marital status of the population. Information was also obtained on the country of birth, period of residence, nationality, religion, educational attainment, occupational status, industry and occupation of the population. All figures in this section refer to the population exclusive of full-blood Aborigines.

## Sex Distribution

The masculinity of the population of South Australia, *i.e.* the number of males to each 100 females at each census is shown below.

Census Year	Masculinity	Census Year	Masculinity
1844 .. . . .	126.1	1891 .. . . .	105.6
1846 .. . . .	130.4	1901 .. . . .	101.5
1851 .. . . .	124.3	1911 .. . . .	103.1
1855 .. . . .	103.8	1921 .. . . .	100.6
1861 .. . . .	105.3	1933 .. . . .	100.3
1866 .. . . .	109.2	1947 .. . . .	98.2
1871 .. . . .	105.6	1954 .. . . .	102.7
1876 .. . . .	107.0	1961 .. . . .	102.3
1881 .. . . .	111.4	1966 .. . . .	101.0

The masculinity in 1966 for the whole of Australia was 101.4.

At each Census except 1947 the State's masculinity was greater than 100, i.e. there were more males than females in South Australia. The lower rate at the 1947 Census was due in part to the loss of male lives in the 1939-45 War, while the subsequent increase can be attributed mainly to the predominantly male migration inflow of the early post-war period. This is shown very clearly in the following table which gives masculinity in five-yearly age groups at the five censuses 1933 to 1966. Masculinity of the 20-24 and 25-29 age groups fell considerably between 1933 and 1947, but then rose to such an extent that by 1954 it was higher in these age groups than in any other age group.

### Masculinity of Population According to Age, South Australia

*Censuses 1933 to 1966*

Age Last Birthday (Years)	1933	1947	1954	1961	1966
0-4 .....	104.78	104.30	104.46	103.21	105.70
5-9 .....	102.80	106.18	104.85	104.98	104.00
10-14 .....	102.96	104.60	105.38	105.75	105.26
15-19 .....	103.47	100.43	105.27	105.55	104.66
20-24 .....	102.09	95.29	113.81	109.21	102.97
25-29 .....	106.25	96.70	111.99	110.23	104.00
30-34 .....	102.72	99.26	106.65	110.78	105.49
35-39 .....	93.22	101.27	105.80	105.31	108.17
40-44 .....	97.30	107.23	107.05	104.86	104.39
45-49 .....	100.23	99.93	110.99	107.65	104.40
50-54 .....	99.04	89.83	104.54	106.49	104.40
55-59 .....	98.02	96.52	91.53	105.42	101.81
60-64 .....	96.43	93.65	87.94	88.90	97.59
65-69 .....	89.36	88.05	87.80	77.48	80.31
70-74 .....	90.34	83.07	81.72	78.01	68.31
75-79 .....	94.58	77.76	73.53	71.88	68.97
80-84 .....	82.90	70.90	66.71	62.44	60.22
85-89 .....	70.12	65.19	62.38	59.06	52.04
90 and over .....	63.95	56.17	53.08	40.60	41.19
All ages.....	100.34	98.16	102.72	102.32	101.00

The larger number of males in the younger age groups reflects the fact that the masculinity of births is consistently over 100 while the higher male death rate is reflected in the very low masculinity ratios of the older age groups.

### Age Distribution

Details of the age distribution of the population are of particular importance as, apart from revealing changes which have occurred in the age structure from one census to the next, they also supply basic material for the calculation of fertility rates, mortality rates, probabilities of survival and annuity rates.

Age distribution of the population at the 1961 and 1966 Censuses is given in the following table. During the five-year period the population (excluding full-blood Aborigines), increased by 122,535 persons (12.6 per cent) of whom



59,996 were under twenty-one years of age. Population in the age groups 15-19 years increased by 38.5 per cent while that in the age groups 30-34 fell by 7.6 per cent.

The movement in these two age groups are in part due to the post 1939-45 War birth rate increase and the low birth rates of the depression years of the early 1930s respectively.

### Age Distribution<sup>(a)</sup> of Population, South Australia

*Censuses 1961 and 1966*

Age Last Birthday (Years)	30 June 1961			30 June 1966			Increase
	Males	Females	Persons	Males	Females	Persons	Persons
0-4 .....	52,311	50,682	102,993	55,233	52,255	107,488	4,495
5-9 .....	50,927	48,509	99,436	57,933	55,704	113,637	14,201
10-14 .....	50,884	48,119	99,003	55,045	52,295	107,340	8,337
15-19 .....	38,276	36,265	74,541	52,779	50,428	103,207	28,666
20-24 .....	31,538	28,879	60,417	39,564	38,424	77,988	17,571
25-29 .....	29,600	26,852	56,452	33,684	32,388	66,072	9,620
30-34 .....	35,328	31,891	67,219	31,879	30,219	62,098	(-) 5,121
35-39 .....	37,175	35,300	72,475	37,644	34,800	72,444	(-) 31
40-44 .....	32,746	31,229	63,975	38,248	36,640	74,888	10,913
45-49 .....	31,959	29,687	61,646	33,167	31,769	64,936	3,290
50-54 .....	26,240	24,641	50,881	30,973	29,669	60,642	9,761
55-59 .....	20,934	19,857	40,791	24,961	24,517	49,478	8,687
60-64 .....	16,305	18,340	34,645	19,221	19,696	38,917	4,272
65-69 .....	13,497	17,419	30,916	14,023	17,461	31,484	568
70-74 .....	11,003	14,104	25,107	10,633	15,565	26,198	1,091
75-79 .....	6,854	9,535	16,389	7,761	11,253	19,014	2,625
80-84 .....	3,185	5,101	8,286	3,988	6,622	10,610	2,324
85-89 .....	1,167	1,976	3,143	1,413	2,715	4,128	985
90 and over .....	296	729	1,025	381	925	1,306	281
Total .....	490,225	479,115	969,340	548,530	543,345	1,091,875	122,535

(a) Adjusted for age not stated.

The next table shows that the proportion of the population under fifteen years of age fell markedly between 1901 and 1947; rose significantly between 1947 and 1961 but fell slightly between 1961 and 1966. The proportion fifteen years and under sixty-five years showed an upward trend to 1947, but has since maintained a fairly stable level of approximately 61 per cent. The proportion of the population sixty-five years and over continued to rise over the period 1901 to 1954, but since 1954 it has fallen slightly.

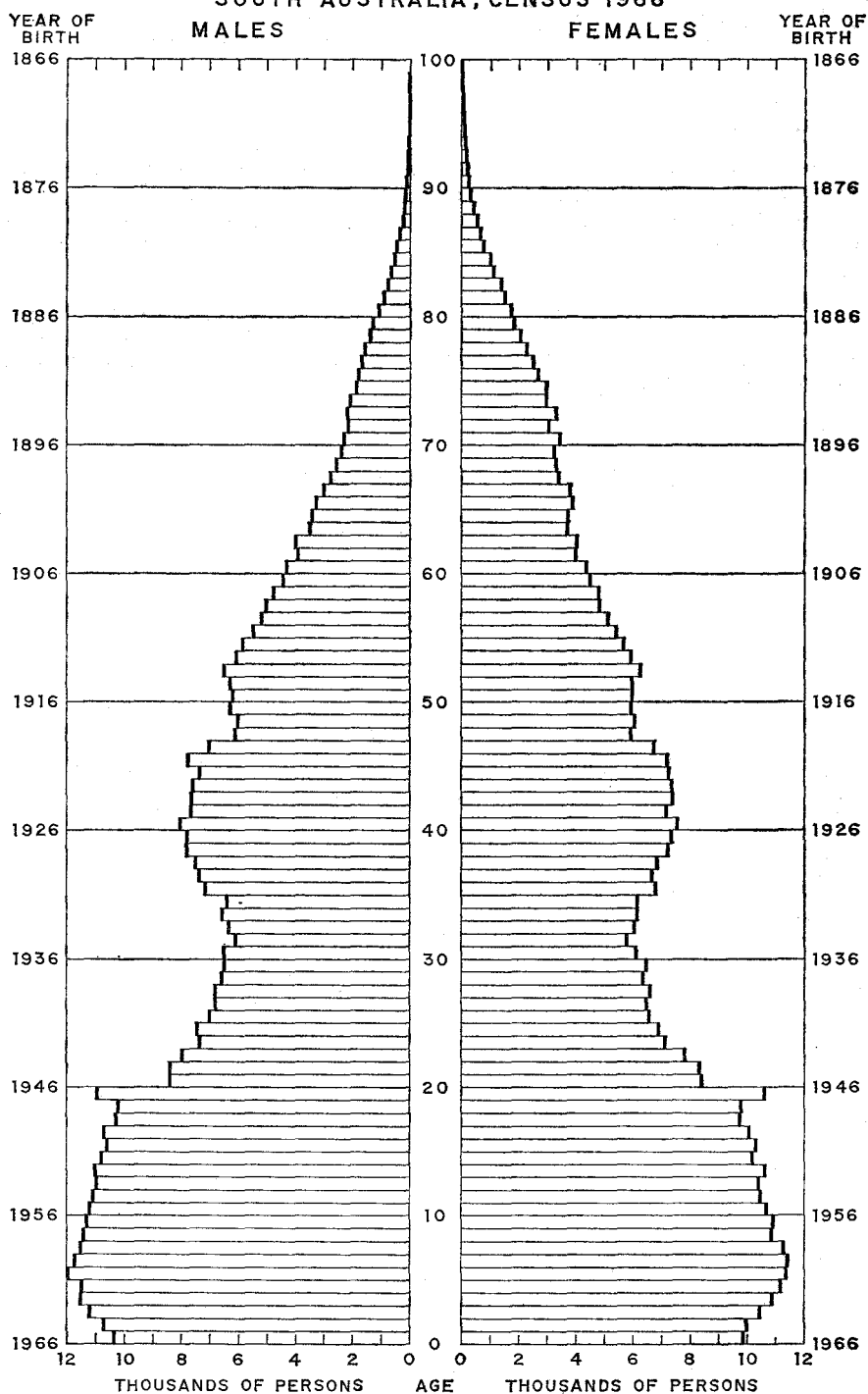
### Proportional Age Distribution of Population, South Australia

*Censuses 1901 to 1966*

Census	Males			Females			Persons		
	Under 15 Years	15 Years and Under 65	65 Years and Over	Under 15 Years	15 Years and Under 65	65 Years and Over	Under 15 Years	15 Years and Under 65	65 Years and Over
	Per Cent								
1901....	36.0	60.0	4.0	35.9	59.8	4.3	35.9	59.9	4.2
1911....	31.1	64.4	4.5	31.3	63.8	4.9	31.2	64.1	4.7
1921....	32.2	62.8	5.0	31.3	63.5	5.2	31.7	63.2	5.1
1933....	26.8	66.6	6.6	26.0	66.6	7.4	26.4	66.6	7.0
1947....	25.1	67.0	7.9	23.5	67.0	9.5	24.3	67.0	8.7
1954....	29.2	62.9	7.9	28.6	61.3	10.1	28.9	62.1	9.0
1961....	31.4	61.2	7.4	30.7	59.1	10.2	31.1	60.1	8.8
1966....	30.7	62.4	7.0	29.5	60.5	10.0	30.1	61.4	8.5

## AGE DISTRIBUTION OF THE POPULATION

SOUTH AUSTRALIA, CENSUS 1966



The mean or average age of the population of South Australia (excluding full-blood Aborigines) at the Census of 1954 was 32.2 years (males 31.5 and females 32.9); in 1961 it was 31.3 years (males 30.6 and females 32.1), and by 1966 it had fallen further to 30.8 years (males 30.4 and females 31.2).

### Marital Status

The marital status of the population was ascertained at the 1961 and 1966 Censuses, when a statement of never married, married, married but permanently separated (legally or otherwise), widowed, or divorced was required in respect of every person enumerated.

In 1966, the number of persons who were stated to have been never married represented 47.7 per cent of the total population, approximately the same proportion as in 1961. Married persons in 1966 represented 45.6 per cent of the total compared with 45.8 per cent in 1961.

### Marital Status of Population, South Australia

#### Censuses 1961 and 1966

Marital Status	30 June 1961				30 June 1966			
	Males		Females		Males		Females	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Never married:								
Under 15 years of age .....	154,122	31.44	147,310	30.74	168,211	30.67	160,254	29.50
15 years of age and over ...	93,927	19.16	66,055	13.79	110,592	20.16	81,731	15.04
Total ....	248,049	50.60	213,365	44.53	278,803	50.83	241,985	44.54
Married .....	223,321	45.56	220,579	46.04	249,048	45.40	248,731	45.78
Married but permanently separated ..	5,049	1.03	5,540	1.16	5,478	1.00	6,201	1.14
Widowed .....	10,303	2.10	35,974	7.51	10,964	2.00	41,577	7.65
Divorced .....	3,503	0.71	3,657	0.76	4,237	0.77	4,851	0.89
Grand total	490,225	100.00	479,115	100.00	548,530	100.00	543,345	100.00

NOTE: Marital status was allocated prior to tabulation where this information was not stated on the Census Schedule.

At the 1961 Census 77.7 per cent of widowed persons were female and this proportion had increased to 79.1 per cent in 1966. The disparity between the number of widowed males and widowed females is the result of the greater longevity of females coupled with the usually younger age at marriage and the greater proportion of widowed males who remarry.

### Period of Residence in Australia

The post-war migration flow into Australia is shown by the numbers of persons who have taken up residence in Australia since the late 1940s. The following table gives details of period of residence of such persons residing in South Australia at the 1961 and 1966 Censuses.

**Period of Residence in Australia of Persons Residing in South Australia**  
**Censuses 1961 and 1966**

Age	30 June 1961			30 June 1966			Increase Persons
	Males	Females	Persons	Males	Females	Persons	
Under 1 year .....	8,859	6,381	15,240	12,235	11,062	23,297	8,057
1 year and under 2 .....	6,678	5,662	12,340	10,332	9,742	20,074	7,734
2 years and under 3 .....	6,522	6,388	12,910	8,834	8,262	17,096	4,186
3 years and under 4 .....	4,321	5,178	9,499	5,961	5,757	11,718	2,219
4 years and under 5 .....	4,969	5,212	10,181	4,349	4,441	8,790	-1,391
5 years and over .....	69,955	52,639	122,594	87,919	73,586	161,505	38,911
Not stated .....	2,236	1,112	3,348	1,935	1,533	3,468	120
Born outside Australia .....	103,540	82,572	186,112	131,565	114,383	245,948	59,836
Born in Australia .....	386,685	396,543	783,228	416,965	428,962	845,927	62,699
Total population	490,225	479,115	969,340	548,530	543,345	1,091,875	122,535

In 1947 there were 43,552 persons residing in South Australia who were not born in Australia and only about 5 per cent of these had lived in Australia for less than five years. By 1954 the number of such persons had risen to 110,605, of whom 51 per cent had resided in Australia for less than 5 years. By 1966 the number had further increased to 245,948, but the proportion of these who had lived in Australia for less than five years had fallen to 33 per cent.

### Country of Birth

At the first census conducted by the Commonwealth in 1911, people of Australia were asked to state their place of birth. The Australian-born content of the population in South Australia was 85.7 per cent in 1911, 88.3 per cent in 1921, 90.3 per cent in 1933, and 93.3 per cent in 1947. Overseas migration had lowered the proportion of Australian-born persons to 86.1 per cent by 1954, whilst in 1966 the proportion was down to 77.5 per cent. The proportion of the population born in the United Kingdom, including the Republic of Ireland, fell from 11.0 per cent in 1911 to 5.1 per cent in 1947 and rose to 11.2 per cent in 1966.

**Country of Birth of Population, South Australia**  
**Censuses 1961 and 1966**

Country of Birth	30 June 1961			30 June 1966			Increase Persons
	Males	Females	Persons	Males	Females	Persons	
Australia .....	386,685	396,543	783,228	416,965	428,962	845,927	62,699
New Zealand .....	936	890	1,826	1,080	1,108	2,188	362
Europe :							
United Kingdom and							
Republic of Ireland .....	41,684	37,102	78,786	62,756	59,274	122,030	43,244
Germany .....	8,345	7,662	16,007	8,189	8,024	16,213	206
Greece .....	5,341	4,187	9,528	7,834	6,826	14,660	5,132
Italy .....	15,446	10,784	26,230	17,130	13,718	30,848	4,618
Netherlands .....	6,781	5,758	12,539	6,703	5,740	12,443	-96
Poland .....	4,471	2,468	6,939	4,519	2,734	7,253	314
Yugoslavia .....	3,260	1,736	4,996	4,024	2,328	6,352	1,356
Other .....	12,456	8,411	20,867	13,107	9,499	22,606	1,739
Total Europe .....	97,784	78,108	175,892	124,262	108,143	232,405	56,513
Other countries .....	4,820	3,574	8,394	6,223	5,132	11,355	2,961
Total born outside Australia	103,540	82,572	186,112	131,565	114,383	245,948	59,836
Total .....	490,225	479,115	969,340	548,530	543,345	1,091,875	122,535

Of persons born in Europe, the greatest numerical and proportionate increase between 1961 and 1966 was in persons born in the United Kingdom, including the Republic of Ireland, (43,244 persons, 54.9 per cent). An almost similar proportionate increase (53.9 per cent) was recorded for persons born in Greece. The percentage increase over the period 1961 to 1966 of persons born in Germany, Italy and the Netherlands was much less than for the period 1954 to 1961.

### Nationality

The nationality (or country of allegiance) of the population of South Australia at June 1961 and 1966 is given in the following table. For purposes of this table, Irish nationality is included with British. Decreases in the number of persons of most nationalities in 1966 are due in part to British naturalisation of former aliens.

**Nationality (i.e. Allegiance) of Population, South Australia**  
*Censuses 1961 and 1966*

Nationality	30 June 1961			30 June 1966			Increase
	Males	Females	Persons	Males	Females	Persons	Persons
<b>British (a):</b>							
Born in Australia .....	386,685	396,543	783,228	416,965	428,962	845,927	62,699
Born outside Australia ...	71,059	57,413	128,472	103,460	90,495	193,955	65,483
<b>Total British .....</b>	<b>457,744</b>	<b>453,956</b>	<b>911,700</b>	<b>520,425</b>	<b>519,457</b>	<b>1,039,882</b>	<b>128,182</b>
<b>Foreign:</b>							
Austrian .....	921	642	1,563	554	401	955	(-) 608
Dutch .....	5,216	4,678	9,894	3,548	3,129	6,677	(-) 3,217
German .....	4,537	3,753	8,290	3,085	2,597	5,682	(-) 2,608
Greek .....	3,767	3,297	7,064	4,994	4,869	9,863	2,799
Hungarian .....	699	476	1,175	304	216	520	(-) 655
Italian .....	9,928	7,935	17,863	9,224	8,538	17,762	(-) 101
Polish .....	1,465	926	2,391	934	677	1,611	(-) 780
Yugoslavian .....	1,456	857	2,313	1,566	926	2,492	179
Other (including Stateless) ..	4,492	2,595	7,087	3,896	2,535	6,431	(-) 656
<b>Total foreign .....</b>	<b>32,481</b>	<b>25,159</b>	<b>57,640</b>	<b>28,105</b>	<b>23,888</b>	<b>51,993</b>	<b>(-) 5,647</b>
<b>Total .....</b>	<b>490,225</b>	<b>479,115</b>	<b>969,340</b>	<b>548,530</b>	<b>543,345</b>	<b>1,091,875</b>	<b>122,535</b>

(a) Includes Irish.

Persons of British nationality represented 99.7 per cent of the State population in 1947, but this proportion had fallen to 95.2 per cent by 1966.

### Religion

Information on the religious affiliations of the population is obtained only at population censuses. There is, however, no legal obligation to answer the question on religion and at the 1966 Census respondents representing approximately 10 per cent of the South Australia population chose not to do so.

The Church of England has always had the greatest number of adherents, its relative importance having been fairly consistent since 1866 when it accounted for 31.8 per cent of answers compared with 29.1 per cent in 1966.

Changes in the pattern of religious affiliations appear to some extent attributable to migratory movements. This is particularly noticeable in the case of Catholics (i.e. persons described as either Catholics or Roman Catholics) who accounted for only 14.3 per cent of the answers in 1933 compared with 22.5 per cent in 1966, thus reflecting the pattern of post-war migration.

## Religions of Population, Censuses 1961 and 1966, South Australia

Religion	30 June 1961			30 June 1966			Increase Per Cent
	Males	Females	Persons	Males	Females	Persons	
<b>Christian:</b>							
Baptist .....	9,830	11,010	20,840	10,342	11,893	22,235	6.7
Brethren .....	250	293	543	270	272	542	-0.2
Catholic, Roman (a) .....	32,821	26,799	59,620	40,016	34,952	74,968	25.7
Catholic (a) .....	61,707	61,708	123,415	72,153	73,455	145,608	18.0
Churches of Christ .....	11,328	12,569	23,897	11,884	13,460	25,344	6.1
Church of England .....	126,918	128,135	255,053	141,408	144,746	286,154	12.2
Congregational .....	8,442	9,425	17,867	8,561	9,727	18,288	2.4
Lutheran .....	27,252	26,695	53,947	29,487	29,794	59,281	9.9
Methodist .....	106,679	110,090	216,769	110,976	116,507	227,483	4.9
Orthodox .....	10,294	8,350	18,644	14,852	12,901	27,753	48.9
Presbyterian .....	19,212	18,891	38,103	21,286	21,401	42,687	12.0
Salvation Army .....	3,161	3,280	6,441	3,542	3,762	7,304	13.4
Seventh Day Adventist .....	1,173	1,384	2,557	1,339	1,660	2,999	17.3
Protestant (undefined) .....	5,892	5,595	11,487	6,556	6,420	12,976	13.0
Other (including Christian undefined) .....	4,667	5,050	9,717	6,863	7,456	14,319	47.4
<b>Total Christian ..</b>	<b>429,626</b>	<b>429,274</b>	<b>858,900</b>	<b>479,535</b>	<b>488,406</b>	<b>967,941</b>	<b>12.7</b>
<b>Non-Christian:</b>							
Hebrew .....	486	499	985	622	627	1,249	26.8
Other .....	695	307	1,002	678	413	1,091	8.9
<b>Total Non-Christian ..</b>	<b>1,181</b>	<b>806</b>	<b>1,987</b>	<b>1,300</b>	<b>1,040</b>	<b>2,340</b>	<b>17.8</b>
<b>Indefinite .....</b>	<b>1,433</b>	<b>1,181</b>	<b>2,614</b>	<b>1,908</b>	<b>1,593</b>	<b>3,501</b>	<b>33.9</b>
<b>No Religion .....</b>	<b>2,138</b>	<b>1,096</b>	<b>3,234</b>	<b>5,379</b>	<b>2,993</b>	<b>8,372</b>	<b>158.9</b>
<b>No reply .....</b>	<b>55,847</b>	<b>46,758</b>	<b>102,605</b>	<b>60,408</b>	<b>49,313</b>	<b>109,721</b>	<b>6.9</b>
<b>Total .....</b>	<b>490,225</b>	<b>479,115</b>	<b>969,340</b>	<b>548,530</b>	<b>543,345</b>	<b>1,091,875</b>	<b>12.6</b>

(a) So described in individual census schedules.

## Educational Attainment

At the 1966 Census information was sought for the first time on the highest level of education attained by all persons. The following table summarises the details obtained for South Australia.

Educational Attainment of Population, South Australia  
Census 1966

Highest Level of Education Attained	Males	Females	Persons	Percentage Distribution		
				Males	Females	Persons
<b>Tertiary:</b>						
University degree .....	7,632	2,060	9,692	1.39	0.38	0.89
Other tertiary qualifications .....	10,907	7,392	18,299	1.99	1.36	1.68
<b>Secondary:</b>						
Passed at Leaving or Leaving Honours level .....	41,373	32,148	73,521	7.54	5.92	6.73
Passed at Intermediate level .....	69,281	73,387	142,668	12.63	13.51	13.07
Attended secondary school (a) .....	130,811	131,190	262,001	23.85	24.14	24.00
<b>Primary:</b>						
Attended primary school (b) .....	221,516	232,459	453,975	40.38	42.78	41.58
No schooling (c) .....	60,221	57,605	117,826	10.98	10.60	10.79
Not stated .....	6,789	7,104	13,893	1.24	1.31	1.27
<b>Total .....</b>	<b>548,530</b>	<b>543,345</b>	<b>1,091,875</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

(a) Passed no examination at intermediate level or above.

(b) Or passed final primary examinations.

(c) Mostly children not yet attending school.

## Other Characteristics

Some census details of occupation, occupational status and industry are set out in Part 7.1.

## **PART 6**

# **SOCIAL ENVIRONMENT**

## **6.1 LAW, ORDER AND PUBLIC SAFETY**

### **LAW AND ADMINISTRATION**

The law in force in South Australia consists of:

- (i) So much of the common law of England and such English statute law as came into force on the original settlement of the colony in 1836;
- (ii) Acts passed by the Parliament of the State of South Australia, together with regulations, rules, orders, etc. made thereunder;
- (iii) Acts passed by the Parliament of the Commonwealth of Australia within the scope of its allotted powers, together with regulations, rules, orders, etc. made thereunder;
- (iv) Imperial law binding South Australia as part of the British Commonwealth, as part of the Commonwealth of Australia or as a State—subject, since 1931, to the Statute of Westminster. (This relates mainly to external affairs or matters of Imperial concern);
- (v) Case law. (This consists of judicial decisions of the English, Commonwealth, or State Courts, respectively, and represents an important part of the law in force in South Australia.)

The scope of Commonwealth legislation is limited to the subjects specified in the Commonwealth Constitution. In some cases Commonwealth powers of legislation are exclusive of, in others concurrent with, those of the State. In all cases of conflict, valid Commonwealth laws override State laws.

### LEGAL PROFESSION

Legal practitioners in South Australia are admitted to the Bar, after the prescribed academic training and service in articles, as barristers, solicitors, attorneys and proctors. This means that the legal profession is not divided, as it is in New South Wales and Queensland. A practitioner is entitled to pursue any one or more of the four callings.

The legal profession is controlled by the Legal Practitioners Act, 1936-1964. Rules of Court prescribe the conditions of entry to the profession, regulate articles of clerkship and specify the legal examinations which must be passed before admission to practice. Women are eligible for admission. Practitioners duly admitted to practice, and who are principals, have the right of audience in all courts of South Australia; those other than principals have this right in all courts except the Supreme Court. The Act provides for the hearing of charges of unprofessional conduct by the statutory committee of the Law Society and for its report to be referred to the Supreme Court which may make any order it thinks fit.

In 1968 there were 426 legal practitioners actually practising in the State; of these 379 were practising in the City of Adelaide.

### LEGAL DEPARTMENT

In South Australia the Attorney-General is a Minister of State Parliament. There is a Solicitor-General who, under the Attorney-General, acts as legal adviser to the Government.

The Attorney-General is charged with the conduct of business relating to the Supreme Court and inferior Courts, the Crown Law Department (which includes the Crown Prosecutor) and the Parliamentary Draftsman as well as statute law revision and consolidation. He also advises Ministers on questions on which his legal opinion is required, initiates and defends proceedings by and against the State and determines whether informations should be laid in cases of indictable offences.

The Attorney-General also administers Acts of Parliament relating to justices, coroners, lands titles, registration of companies and business names, licensing and the Electoral Department.

### SUPREME COURT

The various jurisdictions of the Court are civil, criminal, matrimonial causes and testamentary causes.

Judges of the Supreme Court are appointed by commission of the Governor on the advice of the Executive Council. A person may not be appointed a judge of the Supreme Court unless he is a legal practitioner of ten years standing.

The Supreme Court Act, 1935-1969, provides *inter alia* for the constitution, jurisdiction, powers and duties of the Supreme Court and its judges. One of the powers of particular importance of the judges of the Court is that of making Rules of Court regulating the procedure of the Court. In particular the Rules, which are published in the *Government Gazette*, may regulate the admission to practice of practitioners of the Supreme Court and control their conduct.

There are at present seven judges of the Supreme Court, comprising the Chief Justice and six puisne judges. A judge holds office until the age of seventy years at a salary fixed by statute. The Court sits in Adelaide, but holds circuit sessions three times each year at Port Augusta and Mount Gambier.



On 28 February 1967 Doctor J. J. Bray Q.C. was appointed as Chief Justice to succeed the Honourable Sir J. Mellis Napier, K.C.M.G., LL.D., who retired after serving a record term of forty-three years on the Supreme Court Bench, twenty-five of these years as Chief Justice.

### Civil and Criminal Jurisdiction

Generally speaking, the Supreme Court has unlimited civil and criminal jurisdiction, except in respect of matters which are reserved for the original jurisdiction of Federal Courts. English practice applies where no contrary provisions exist in the State's statute law.

Crimes and misdemeanours prosecuted by indictment in the Supreme Court must be tried before a jury of twelve persons who find as to the facts of the case; the punishment being determined by the judge. Capital punishment applies in the case of murder, treason and certain offences under the Commonwealth *Crimes Act* 1914-1966, and *Crimes (Aircraft) Act* 1963.

The Court has original jurisdiction over all litigious matters arising in the State except where its jurisdiction is excluded by statute. Its original jurisdiction is usually exercised by one judge although it is possible in theory to try a civil issue with a jury.

The money value of judgments entered during 1968 either on liquidated claims or claims for unspecified damages was \$1,737,131.

The Court also has power at common law to restrain inferior courts acting in excess of their jurisdiction and may, by order, compel them to enforce a legal right. The Court also acts as a court of appeal from inferior courts. During 1968, the Supreme Court heard 124 appeals from inferior courts. Of these 50 were dismissed, 58 were allowed, 15 were remitted for rehearing and one was struck out.

In proper cases, appeals may be carried from decisions of the Supreme Court to the High Court of Australia, or to the Privy Council.

The following table gives details of persons tried, convicted, and executed for the years 1959 to 1968. In the post-war period to the end of 1968 a total of twenty-six persons have been sentenced to death in South Australia, twenty of these sentences being subsequently commuted. No female has been executed in the State since 1873.

### Supreme and Circuit Courts: Trials, Convictions and Executions, South Australia

Year	Tried		Convicted		Executed
	Males	Females	Males	Females	Males
1959.....	528	17	482	17	—
1960.....	590	27	557	23	—
1961.....	622	17	591	15	—
1962.....	743	24	697	21	—
1963.....	737	35	716	29	—
1964.....	650	21	608	21	1
1965.....	707	28	687	26	—
1966.....	751	19	720	18	—
1967.....	706	38	674	33	—
1968.....	698	38	659	33	—

Details of convictions classified by type of offence are set out in the following table.

**Supreme and Circuit Courts: Persons Convicted<sup>(a)</sup>, South Australia**

Type of Offence	1964	1965	1966	1967	1968
<b>Offences against the person:</b>					
Murder and attempted murder .....	3	1	2	3	3
Other acts causing death, injury or endangering life .....	39	34	28	28	33
Offences against females .....	142	193	189	170	167
Unnatural offences .....	39	22	22	16	26
Other offences against the person .....	11	26	9	8	8
<b>Total .....</b>	<b>234</b>	<b>276</b>	<b>250</b>	<b>225</b>	<b>237</b>
<b>Offences against property:</b>					
Robbery .....	8	23	8	14	11
Breaking and entering and burglary .....	214	270	312	358	307
Embezzlement and stealing by servants ...	8	9	16	7	12
Fraud and false pretences .....	23	28	24	19	20
Other offences against property .....	46	32	52	24	38
<b>Total .....</b>	<b>299</b>	<b>362</b>	<b>412</b>	<b>422</b>	<b>388</b>
<b>Other offences:</b>					
Forgery and offences against the currency .	29	20	27	21	18
Breach of recognisance .....	25	14	19	13	24
Other .....	42	41	30	26	25
<b>Total .....</b>	<b>96</b>	<b>75</b>	<b>76</b>	<b>60</b>	<b>67</b>
<b>Grand total .....</b>	<b>629</b>	<b>713</b>	<b>738</b>	<b>707</b>	<b>692</b>

(a) In the case of multiple charges, where more than one conviction is recorded, the most serious offence is counted.

### Matrimonial Causes Jurisdiction

As in other States, the Supreme Court exercises jurisdiction in matrimonial causes pursuant to the Commonwealth *Matrimonial Causes Act* 1959-1966. The Act superseded the existing State law, making many important changes in the practice and procedure of the Supreme Court in matrimonial causes.

'Matrimonial cause' normally refers to proceedings for a decree of dissolution of marriage; however, the Court also hears proceedings for a decree of nullity of marriage, judicial separation or restitution of conjugal rights.

The jurisdiction of the Supreme Court is co-extensive with the Supreme Courts of the other States; there is no requirement that either or both parties shall be domiciled or resident within the territorial boundaries of the jurisdiction of the court. However, the Court will transfer to the most convenient court any suit for which it considers itself not to be the appropriate court.

Proceedings for a decree of dissolution of marriage, or of nullity of a voidable marriage, can be instituted only by a person domiciled in Australia; while proceedings for a decree of nullity of a void marriage can be instituted by a person domiciled or resident in Australia. The grounds upon which a petition for dissolution of marriage may be granted are set out in Section 28 of the Act, the most common being desertion for two years, adultery, separation for five years, and habitual cruelty. Details of divorces granted and the grounds for divorce are shown in Part 6.8.

At the same time as the proceedings for principal relief, the Court may hear a claim for permanent maintenance and also a claim for custody of children. The powers of the Court in proceedings with respect to the custody, guardianship, welfare, advancement or education of children of the marriage are dealt with in Section 85 which provides that the Court shall regard the interests of the children as the paramount consideration but, subject to that, may make such order as it thinks proper. The Court also has wide powers in respect of the settlement of property.

### **Testamentary Causes Jurisdiction**

The Supreme Court in its testamentary causes jurisdiction is the only authority competent to grant probate of the will, or administration of the estate, of any deceased person who leaves real or personal property in the State. Pending a grant of probate or administration, all property of the deceased person is vested in the Public Trustee, and with a few exceptions, the property cannot be dealt with in any way until a grant has been obtained. The Court will not issue a grant until death duty has been paid.

The powers of the Court are exercised by a judge, the Master and the Registrar or Deputy Registrar of Probates. The latter deal with all applications for probate and administration where there is no contention and any matters prescribed by the rules. In cases of doubt or difficulty, the Registrar refers the matter to a Judge in Chambers. The records of the Court are available for public inspection, and copies of wills and other documents may be obtained.

Some statistics of the estates of deceased persons appear in Part 13.3

## **LOCAL COURTS**

Local courts were first established in South Australia by an ordinance of 1850 and originally had criminal as well as civil jurisdiction.

The Local Courts Act, 1926, effected important alterations in the structure and jurisdiction of local courts by abolishing juries in local courts and also justices as constituent members of courts of full jurisdiction (except on the application of a party), by conferring equitable jurisdiction on the Local Court of Adelaide of Full Jurisdiction, and by giving a full appeal to the Supreme Court on facts as well as on law from all judgments, determinations, and orders of local courts in actions involving over \$60.

Local courts are now established under the Local Courts Act, 1926-1965, and have only civil jurisdiction. They are located in Adelaide and the main country towns, and have jurisdiction in common law claims up to a limit of \$2,500. The Local Court of Adelaide has certain equitable jurisdiction as set out in the Local Courts Act. In addition the Local Court of Adelaide and a number of specified local courts (e.g. Port Adelaide, Port Pirie, Mount Gambier and others) exercise jurisdiction under certain other Acts, the principal of which is the Workmen's Compensation Act.

Claims under \$60 may be heard by a Local Court of Limited Jurisdiction, that is, a local court constituted by two justices of the peace. Claims for a greater amount must be heard by a special magistrate or, in the Local Court of Adelaide, may be heard by the Local Court Judge.

Under Section 28 of the Local Courts Act the Local Court Judge may make Rules of Court for carrying the Act or any other Act conferring jurisdiction upon local courts into effect.

## Local Courts: Summary of Transactions, South Australia

Year	Total Claims		Verdicts and Judgments						Service and Execution of Process Act		
	Sum-moneses Issued (a)	Amount Sued For	Verdicts by Trial		Judgment by Default		Total		Sum-moneses for Service out of Jurisdiction	Certificates	
			Number	Amount	Number	Amount	Number	Amount		To Other States	From Other States
		\$'000		\$'000		\$'000		\$'000			
1963 .....	97,038	7,341	1,232	365	46,569	3,719	47,801	4,084	2,617	1,095	266
1964 .....	103,218	8,049	1,407	336	53,679	3,933	55,086	4,269	2,487	1,237	269
1965 .....	104,297	8,709	1,550	374	45,281	3,219	46,831	3,594	2,214	904	267
1966 .....	99,601	8,827	1,372	343	50,189	4,137	51,561	4,500	2,580	1,231	288
1967 .....	96,145	8,867	1,637	405	49,346	4,363	50,983	4,768	2,797	1,609	269

(a) Including those withdrawn or settled out of Court.

## COURTS OF SUMMARY JURISDICTION

Courts of Summary Jurisdiction are established in all major towns and hear many criminal cases. In offences of dishonesty their jurisdiction is in most instances confined to cases where the property value is not more than \$400, and the limit of their jurisdiction as to penalty is imprisonment for two years. Their procedure is regulated by the Justices Act, 1921-1965. They are presided over either by a special magistrate or by two justices of the peace, with the more serious causes generally being heard by a special magistrate.

Courts of Summary Jurisdiction (Magistrates Courts), South Australia  
Persons Convicted, Including Juveniles<sup>(a)</sup>

Offence	1963-64	1964-65	1965-66	1966-67	1967-68
Against the person .....	355	334	301	347	413
Against property:					
Burglary and housebreaking ..	431	576	696	659	767
Larceny (various) .....	1,941	2,479	2,501	2,653	2,837
Other .....	1,179	1,254	1,369	1,304	1,569
Against morality .....	342	258	313	346	349
Against good order:					
Drunkenness .....	6,952	7,110	7,334	6,109	6,889
Unlawfully on premises .....	347	409	460	427	598
Vagrancy .....	378	435	548	470	573
Other .....	1,147	1,584	1,803	1,819	2,149
Other, relating to:					
Road Traffic and Motor Vehicles Acts .....	27,645	34,165	40,968	55,567	70,472
Licensing .....	1,018	788	795	848	1,138
Social Welfare .....	1,520	1,758	1,450	1,458	1,589
Police Act .....	946	831	1,008	1,091	1,509
Local government .....	5,101	4,647	5,833	5,235	4,691
Australian Broadcasting Act ..	2,284	1,773	2,317	3,818	2,884
Income tax assessment .....	811	523	551	603	1,004
Other .....	3,011	3,314	3,447	4,356	5,596
Total persons convicted:					
Males .....	52,581	59,104	67,338	80,978	96,747
Females .....	2,827	3,134	4,356	6,132	8,280
Total .....	55,408	62,238	71,694	87,110	105,027

(a) Where multiple charges have been laid against one individual at the same time each type of offence has been counted separately.

Special magistrates are appointed under the Justices Act, and each appointment must be approved by the Chief Justice. In practice appointees are required to be practitioners of the Supreme Court who have been practising for some years.

Offences under the Road Traffic and Motor Vehicles Acts accounted for 67 per cent of total convictions in 1967-68—this compares with 54 per cent in 1957-58 and 42 per cent in 1947-48.

Of the 8,280 females convicted in 1967-68, 4,817 were convicted of offences under the Road Traffic and Motor Vehicles Acts, 114 under the Social Welfare Act, 519 under laws relating to local government (largely city parking offences), and 507 were convicted of various forms of larceny.

### JUVENILE COURTS

Juvenile courts for the trial of juvenile offenders, *i.e.*, persons under eighteen years of age, are presided over by a special magistrate or two justices of the peace who are approved as suitable to exercise this jurisdiction. The courts may try any offence (except homicide) committed by a juvenile. The penalties that may be imposed are a fine, a bond with or without supervision, or committal to the custody and control of the Minister of Social Welfare or committal to a training school. Juvenile courts also exercise jurisdiction over destitute, neglected or uncontrolled children and may commit such children to a childrens home. The principles upon which a juvenile court must act in making orders in respect of these latter are set out in Section 44 of the Juvenile Courts Act, 1965-1966, which reads in part as follows:

'Before making an order under this section committing a child to an institution, the Court shall have regard to the welfare of the child and the desirability or otherwise of removing him from unsuitable surroundings and making proper provision for his care, training and control.'

#### Juveniles Convicted<sup>(a)</sup>, South Australia

Offences	1963-64	1964-65	1965-66	1966-67	1967-68
Against the person .....	42	44	37	53	73
Against property:					
Burglary and housebreaking ..	420	576	639	620	737
Larceny (various) .....	759	1,099	1,061	1,673	1,297
Other .....	334	447	343	345	422
Against morality .....	166	137	180	144	130
Against good order:					
Unlawfully on premises .....	83	123	116	118	180
Other .....	233	315	341	380	560
Other:					
Road Traffic and Motor Vehicles Acts .....	1,012	1,853	2,590	2,939	3,574
Police Act .....	195	208	157	188	314
Other .....	388	272	266	224	428
Total juveniles convicted:					
Males .....	3,489	4,822	5,471	6,373	7,203
Females .....	143	252	259	311	512
Total .....	3,632	5,074	5,730	6,684	7,715

(a) Under 18 years. Includes both police and private cases. Excludes children found to be neglected, destitute or uncontrolled.

## THE LICENSING COURT

The licensing of hotels, and liquor licences for storekeepers, restaurants and clubs is governed by the Licensing Act 1967-1968 which repealed the Licensing Act 1932-1966. The new Act included changes in the constitution and powers of the Licensing Court, the abolition of local option polls and the extension of hotel trading hours to 10 p.m.

The Licensing Court consists of a Chairman who has the rank and title of Judge of the Court and a panel of six Licensing Magistrates, one of whom has the title of Deputy Chairman. The more important work of the Court, for example the grant of new licences and the forfeiture and removal of licences, is done by the Full Bench which consists of the Chairman or Deputy Chairman and two Licensing Magistrates. Other matters may be dealt with by a member of the Court sitting alone. Since the local option polls are no longer part of the licensing system the question of whether a licence should be granted is wholly in the hands of the Court. The Act contains some requirements which must be observed before the Court can grant a licence. In addition full opportunity is given for any person to object on a number of grounds to the grant of a licence.

The types of licences that may be granted are:

- |  |                             |
|--|-----------------------------|
| (a) Full publican's licence.           | (j) Packet licence.         |
| (b) Limited publican's licence.        | (k) Railway licence.        |
| (c) Wholesale storekeeper's licence.   | (l) Restaurant licence.     |
| (d) Retail storekeeper's licence.      | (m) Cabaret licence.        |
| (e) Wine licence.                      | (n) Theatre licence.        |
| (f) Brewer's Australian ale licence.   | (o) Special licence.        |
| (g) Distiller's storekeeper's licence. | (p) Five gallon licence.    |
| (h) Vigneron's licence.                | (q) Hotel broker's licence. |
| (i) Club licence.                      |                             |

A packet licence covers the sale of liquor to passengers on board steamers or vessels; a special licence may be granted where an application for the renewal of a licence is adjourned, while the limited publican's licence is available to 'premises specifically constructed and primarily used for the service of the itinerant public.' In the case of full publican's, limited publican's, and restaurant licences, liquor may be consumed in the dining area each weekday from 12 noon to 11.30 p.m. and on Sundays between 12 noon and 10.45 p.m. by persons taking *bona fide* meals with or ancillary to such meals. A hotel broker's licence is necessary for persons dealing in the sale or transfer of licences.

Fees for licences are paid in accordance with the amount of liquor purchased (or in some cases sold) during the preceding twelve months and at present in the case of the retail licences is calculated at 6 per cent of the amount of purchases.

In addition permits may be granted under certain circumstances to extend the trading hours of licensed premises and to allow the sale or supply or consumption of liquor in unlicensed premises.

During 1968 amendments to the Licensing Act made provision from 19 December 1968 for the lowering of the minimum drinking age from twenty-one to twenty and provided also for the granting of wine licences to museums and art galleries situated in wine producing areas of the State.

The following table shows the number of licences and permits issued to or in force at 31 March 1969.

*Licences:*

Full publican's . . . . .	597
Limited publican's . . . . .	24
Wholesale storekeeper's . . . . .	36
Retail storekeeper's . . . . .	38
Wine . . . . .	11
Brewer's . . . . .	4
Distiller's storekeeper's . . . . .	32
Vigneron's . . . . .	32
Club . . . . .	53
Packet . . . . .	3
Railway . . . . .	1
Restaurant . . . . .	56
Cabaret . . . . .	3
Theatre . . . . .	1
Special . . . . .	2
Five gallon . . . . .	5
Hotel broker's . . . . .	13

*Permits:*

Special licensed premises . . . . .	3,788
Special unlicensed premises . . . . .	13,920
Entertainment . . . . .	210
Club . . . . .	1,912
Booth . . . . .	7,449
Supper . . . . .	44
Wine in restaurants (old Act) . . . . .	45
Storekeepers Australian wine . . . . .	59

## BANKRUPTCY

Since 1928 bankruptcy has been under Commonwealth jurisdiction. Under the Commonwealth *Bankruptcy Act* 1966-1968 South Australia is a bankruptcy 'district' and jurisdiction is exercised through the Court of Insolvency of the State of South Australia exercising Commonwealth jurisdiction in bankruptcy.

### Bankruptcies: Numbers, Liabilities, Assets, South Australia

Year	Sequestration Orders and Orders for Administration of Deceased Debtors Estates			Compositions, Schemes of Arrangement and Deeds of Assignment			Total Debtors
	Number	Liabilities	Assets	Number	Liabilities	Assets	
		\$	\$		\$	\$	
1964.....	626	2,539,338	1,260,992	49	543,966	472,612	675
1965.....	543	2,925,218	1,564,316	39	581,544	490,774	582
1966.....	617	2,859,762	1,185,523	31	594,521	342,549	648
1967.....	638	3,026,573	1,532,269	21	243,189	164,563	659
1968.....	742	3,544,704	1,844,884	14	390,395	327,320	756

A debt of at least \$500 is necessary before a creditor may commence bankruptcy proceedings. Preferential creditors include employees for amounts owing in respect of wages and salaries, workers compensation, long service leave, annual leave, recreation leave or sick leave, and the Commissioner of Taxation for unpaid tax on one year's income.

A bankrupt who has not previously been discharged is automatically discharged after five years unless an objection is filed with the Registrar in Bankruptcy, provided that no such automatic discharges will apply before 4 March 1971.

### ADOPTION COURTS

Adoption courts are held in Adelaide, Port Adelaide and all major country towns. They are presided over by a special magistrate and two justices of the peace, one of whom must be a woman. The function of these courts is to enquire into the character and standing of persons applying to adopt a child and to decide whether the adoption would be for the benefit of the child. For details of adoptions see the table on page 251.

### JURY SYSTEM

The procedure in relation to juries is governed by the Juries Act, 1927-1965.

With certain exceptions all men over the age of twenty-five and under sixty-five who are enrolled as electors for the House of Assembly are qualified and liable to serve as jurors. Men exempted from liability to serve are listed in the third schedule of the Act and include judges, members of Parliament, certain public officers, members of the defence forces, clergymen, legal practitioners, magistrates, police officers, doctors, dentists, pharmacists and school teachers.

Legislation passed in 1965 provided for women to serve on juries under the same qualifications as men. Automatically exempted are nurses and wives of judges or magistrates, but any other woman may be exempted upon application.

A jurors list is compiled annually for each jurors district by the Sheriff. The jurors summoned to hear and determine an issue are decided by lot. Accused persons and the Crown each have the right to challenge three jurors without assigning reasons.

### STATE INDUSTRIAL TRIBUNALS

Industrial arbitration in South Australia was inaugurated in 1894 by the establishment of Boards of Conciliation. Since then the system has undergone fundamental changes from time to time and the present basis is the Industrial Code, 1967-1968, under which the Industrial Commission, Conciliation Committees and Commissioners have been established.

For details on the composition of these bodies and their functions see Part 7.2.

### LEGAL ASSISTANCE SCHEME

The Poor Persons Legal Assistance Scheme is administered by the Law Society of South Australia Incorporated. It has been in operation since 1933 as a means of providing legal help necessary for persons who would otherwise through lack of money be embarrassed or prevented from the proper assertion of their legal rights.



The basis of the scheme is an agreement between the Government and the Law Society which has given an undertaking that 'no person shall be without proper legal assistance if he is deserving of such assistance and would be unable to obtain it without the help of the Society's members'. In return, the Government makes an annual grant to the Society (\$23,000 in 1967-68) to cover the administrative expenses in carrying out the scheme. In addition, the Government makes a half-yearly grant out of which members of the profession who undertake assignments under the scheme receive payment of out-of-pocket expenses and a proportionate amount of costs. The amount granted for 1967-68 was \$15,000 representing an average return on all work done of twenty-two cents in the dollar.

### PUBLIC TRUSTEE

The office of Public Trustee was established in 1881 and is now regulated by the Administration and Probate Act, 1919-1960.

The office provides a necessary and efficient service to the public in ensuring the safe and economical administration of estates and the protection of infants and absentee beneficiaries in estates administered by private administrators. Any person may appoint the Public Trustee to be the executor and trustee of a will. He may also appoint him as trustee of any disposition of property creating a trust, other than a trust exclusively for religious purposes.

The Public Trustee, where directed by the Court, becomes administrator of certain deceased estates; acts as guardian of certain infants; controls a protected person's property under the Aged and Infirm Persons' Property Act, 1940-1968; and receives, invests and distributes for the benefit of widows and minor dependants, amounts awarded under the Workmen's Compensation Act, 1932-1966.

Under the Mental Health Act, 1935-1968, the Public Trustee has control of the estates of some of the patients in Government mental hospitals, and may be appointed to act for the estate of any person found to be of unsound mind.

### THE SOUTH AUSTRALIAN POLICE FORCE

Although South Australia was colonised in 1836 there was no police force until 1838. The original police force was administered by a board of commissioners until 1840, when the first Commissioner of Police was appointed.

Early mobility depended largely on horses, and it was not until 1922 that the first motor cycles were introduced into the force as a forerunner of the present use of motor vehicles. The system of radio-controlled patrols was introduced in 1948. In addition to the metropolitan network, all country police headquarters and a number of outback stations are in constant radio contact with the central radio room in Adelaide.

Routine maintenance of law and order and reduction of opportunities for criminal activity are the main functions of the Uniformed Branch. The Traffic Division of this Branch, while concerned with the general regulation and control of traffic, also aims at reducing the number of road fatalities and injuries. Testing of vehicles for roadworthiness, lecturing on road courtesy and safety, practical driving courses and driving tests for licence applicants are all aimed at greater road safety.

Police Personnel<sup>(a)</sup>, South Australia

At 30 June

Personnel	1964	1965	1966	1967	1968
Commissioned officers .....	39	41	43	46	48
Non-commissioned officers .....	180	185	186	332	350
Constables .....	1,232	1,290	1,322	1,243	1,341
Women police .....	45	42	44	39	38
Total active police force	1,496	1,558	1,595	1,660	1,777
Inhabitants per active member ..	694	685	687	670	633

(a) Active police force strength ; excludes trainees, Women Police auxiliaries, civil staff, etc.

The Criminal Investigation Branch is split into squads each concerned with a particular type of crime. Auxiliary services provided by the *modus operandi*, fingerprint and photographic, scientific, ballistics and handwriting sections are often essential aids in criminal investigation.

Women Police officers have a role in the social welfare of the community which is now well recognised. These officers render assistance to lost and destitute children and endeavour to alleviate domestic suffering and hardship. They are also active in the control of juvenile delinquency. At 30 June 1968 there were thirty-eight Women Police officers.

In 1959 a Police Emergency Operations Group consisting of a Cliff Rescue Squad, Underwater Recovery Squad and an Emergency Squad was constituted. The Commissioner of Police is also responsible for the Emergency Fire Services, operations of which are outlined on pages 149-50.

Today, with a proliferation of laws and changing policing techniques, much emphasis is placed on the work of the Training Division. Police cadets (enrolled at sixteen or seventeen years) are given a three year course of academic and practical instruction at the Fort Largs Training Academy before graduating to active police work. At 30 June 1968 there were 436 police cadets. As well as this initial training, refresher courses keep the members abreast of changing administrative and legal developments, and of changes in policing techniques. Also provided are specialist and higher training courses for senior officers, and each year several Inspectors attend an officers course at the Australian Police College, Manly, New South Wales.

South Australian Police Force, Revenue and Expenditure<sup>(a)</sup>

Year	Expenditure			Revenue	Net Cost	
	Wages and Salaries	Other	Total		Total	Per Inhabitant
	\$	\$	\$	\$	\$	\$
1963-64 .....	4,639,230	1,704,276	6,343,506	98,264	6,245,242	6.10
1964-65 .....	5,229,414	1,791,938	7,021,352	109,774	6,911,578	6.57
1965-66 .....	5,519,200	1,919,496	7,438,696	119,547	7,319,149	6.77
1966-67 .....	6,459,754	2,077,347	8,537,101	119,960	8,417,141	7.62
1967-68 .....	7,119,787	2,202,535	9,322,322	116,083	9,206,239	8.23

(a) As reflected in Consolidated Revenue Account only. Most capital expenditure is met from Loan Fund.

## GAOLS AND PRISONS

Gaols and prisons in South Australia are administered by the Prisons Department, seven being in use during 1967-68. Adelaide Gaol, a holding centre for remand prisoners and sentenced prisoners serving under three months, also houses a womens section. Yatala Labour Prison (eight miles from Adelaide) provides for minimum, medium and maximum security prisoners with sentences from three months to life. Gladstone Prison (mid-North), Port Augusta Gaol (North), Mount Gambier Gaol (South-East), and Port Lincoln Prison (West Coast), are all medium security institutions. Cadell Training Centre on the River Murray 100 miles from Adelaide is a dual purpose training institution, accommodating sixty selected minimum security trainees and sixty medium security short-term prisoners. In addition there were eight police prisons for short-term prisoners situated throughout the State.

Extensions at Yatala for a further sixty minimum security prisoners have now been completed and accommodation at Cadell for an additional sixty minimum security trainees was nearing completion in December 1968.

Work has commenced on the building of a new Women's Prison at Northfield to be known as the Northfield Women's Rehabilitation Centre. This will replace the present women's section at the Adelaide Gaol, which will provide additional accommodation for male prisoners. Plans are still in hand for the building of a new gaol at Port Augusta.

In common with other States and countries the emphasis in South Australia is on rehabilitation, and with this end in view officers are carefully selected and undergo an intensive training course before being appointed to the prison service. Refresher and advanced training courses are held continuously to keep officers informed on penological matters.

Training in a large variety of trades and industries is available throughout the institutions enabling prisoners to be prepared for ultimate outside employment. Education courses at all levels are available at no cost; special classes are held for migrants and illiterates; medical, dental, psychological, and psychiatric services are also provided. A classification committee ensures that prisoners are correctly assessed for education, employment, and other training purposes, etc. and group counselling is practised in all institutions. Chaplains, the Prisoners Aid Association and other voluntary organisations willingly assist the prison administration in a wide range of matters affecting the well-being and after-care of prisoners and their families.

Two valuable community services rendered by prisoners are the transcription of books into braille for the blind, and the provision of emergency fire service units at three institutions.

In South Australia the terms 'parole' and 'probation' are synonymous. Prisoners may be released on probation by the courts or released on probation from prison after serving portion of their sentence. Both categories of probationers come under the supervision of probation officers of the Adult Probation Service. Officers of this service also supervise prisoners released on licence, such as habitual criminals, and those serving life sentences. The Adult Probation Service also prepares pre-sentence reports for the courts.

**Gaols and Prisons, South Australia**

Year	Total Accommodation for Prisoners	Prisoners Received to Serve Sentence (a) (b)		Daily Average Number of Prisoners under Sentence (a)	
		Males	Females	Males	Females
1963-64 .....	1,015	4,314	178	679	16
1964-65 .....	1,022	4,078	125	712	16
1965-66 .....	1,065	4,773	118	678	19
1966-67 .....	1,118	4,520	136	684	21
1967-68 .....	1,276	6,648	448	821	39

(a) Prior to 1967-68, the number of prisoners excludes debtors and Aborigines.

(b) Counted once each time received.

**PUBLIC SAFETY****FIRE SERVICES****The Fire Brigades Board**

Provision for the establishment and maintenance of fire brigades in South Australia under the control and management of the Fire Brigades Board was first enacted in 1882.

In accordance with its general duty of extinguishing fires and protecting life and property in case of fire, the Board maintains suitably equipped fire brigades in proclaimed fire districts in the Adelaide Metropolitan Area and in country towns. At 30 June 1968 there were thirty-seven fire brigade stations of which fifteen were metropolitan and twenty-two were country. During the year 1967-68 these brigades received 3,541 calls of which 451 were false and malicious calls. Some of these brigades are manned by permanent personnel and others by auxiliary firemen, there being at 30 June 1968, 387 officers and firemen and 90 auxiliary firemen.

In addition to its main function, the Board provides a service section for the regular maintenance of private fire equipment installed in public and private premises, and makes its officers available for inspection of premises and for advice on fire protection generally, as well as to demonstrate the use and handling of various types of first aid fire equipment.

The Fire Brigades Act, 1936-1958 provides that the expenses and maintenance of brigades be defrayed in the proportion of two-ninths by the Treasury; five-ninths by insurance companies; and two-ninths by the municipalities and district councils concerned. If the Treasury proportion exceeds its statutory contribution of approximately \$27,000, the excess is borne five-sevenths by insurance companies and two-sevenths by municipalities and district councils.

The total revenue for the year 1967-68 was \$1,669,902 including contributions of \$1,447,299 made up as follows; insurance companies \$871,079; municipalities and district councils \$348,431; and Treasury \$227,788 which included a special grant of \$198,970.

**South Australian Emergency Fire Services**

The South Australian Emergency Fire Services was formed as a branch of Civil Defence during the 1939-45 War. When Civil Defence was disbanded, redundant trailer pumps were issued to local governing bodies by the State Government and the Emergency Fire Service (E.F.S.) was developed into a

volunteer country fire service, to protect those areas outside of the districts covered under the Fire Brigades Act, 1936-1958. The responsibility and authority for fire prevention and control in these outer areas are vested in local government by the Bushfires Act, 1960-1968 and Local Government Act, 1934-1969.

E.F.S. Headquarters, a branch of the Police Department, functions as a co-ordinating centre. The Director of Emergency Fire Services, responsible to the Commissioner of Police, advises on fire protection problems, conducts competitions and training programmes, and co-ordinates fire-fighters and auxiliaries in major fire control.

Fire equipment purchased by E.F.S. organisations and councils is subsidised by the Bushfires Equipment Subsidies Fund (equal contributions by the State Government and by fire insurers), and government subsidies are provided for maintenance.

#### South Australian Emergency Fire Services

Particulars	1964	1965	1966	1967	1968
<b>Strength of service at 30 June:</b>					
Affiliated organisations .....	345	360	377	392	395
Volunteer members .....	6,500	7,000	7,500	8,500	8,500
<b>Fires attended in twelve months ended 30 June:</b>					
Number of fires;					
Domestic .....	202	175	220	260	300
Rural .....	1,047	1,084	1,301	899	605
<b>Acres destroyed in rural fires .</b>	144,931	107,172	155,881	36,829	42,145
<b>Financial losses;</b>	\$	\$	\$	\$	\$
Domestic .....	226,612	201,448	292,230	286,948	296,714
Rural .....	250,752	649,698	419,926	126,655	37,676

#### LIFE SAVING

##### The Royal Life Savings Society—Australia

The South Australian Branch of the Royal Life Saving Society—Australia was established in 1909 and the formation of clubs at various beaches followed. In 1952 an agreement was made with the Surf Life Saving Association whereby this body undertook responsibility for life saving on ocean beaches, the Royal Life Saving Society retaining responsibility in all other areas of activity.

In South Australia the Society has developed into a large teaching body administered by a State Council, giving instruction to schools and other interested bodies in the various methods of life saving, including the current methods of artificial respiration. This is done through the medium of honorary instructors and examiners. In the winter months the emphasis is on talks and demonstrations on resuscitation, but during the swimming season weekly life saving instruction and examination and the performance of life saving demonstrations are conducted throughout the State. Certificates and medallions are issued to candidates who pass the various examinations. In the 1967-68 season these awards exceeded 26,000.

The honorary work of the Society is financed mainly by grants made by both the Commonwealth and the State Governments, and by donations.

### **The Surf Life Saving Association**

The South Australian State Centre of the Surf Life Saving Association of Australia was formed in 1952, with the co-operation of the South Australian Branch of the Royal Life Saving Society and the Surf Life Saving Association of Australia.

The Henley, Glenelg and Moana Life Saving Clubs formed the nucleus of this body, which now has twenty affiliated clubs situated at Semaphore, Grange, Henley, West Beach, Glenelg, Somerton, Brighton, Seacliff, Christies Beach, Port Noarlunga, Southport, Moana, Chiton Rocks, Port Elliot, Port Lincoln, Whyalla, Taperoo Beach, Port MacDonnell, Hallett Cove and Goolwa.

Voluntary members give many hours to patrolling their respective beaches each weekend and public holiday from the beginning of November until the end of March. At 30 June 1968 there were 1,417 members in Association clubs. From 1952 to the end of the 1967-68 season 1,053 rescues were performed with no loss of life on South Australian beaches whilst being patrolled by club members. During this same period many hundreds of persons received first-aid treatment.

The South Australian State Centre receives an annual grant from the State Government and individual clubs have been assisted with subsidies when building their club houses.

### **'Learn to Swim' Campaign**

Vacation swimming classes organised by the Education Department were first established on an extensive scale in January 1956. Thirty-six country and fourteen metropolitan swimming centres were set up and over 7,000 children enrolled for instruction. The January 'Learn to Swim' campaign has been continued in each subsequent year and has grown steadily; in the summer vacation of 1967-68, 109 country and 53 metropolitan swimming centres were used, and the total student enrolment was over 41,200. Instruction is provided over a period of ten days by qualified swimming teachers.

Swimming classes have also been conducted in school time since October 1954, and in the first term of 1968 about 51,000 children were enrolled in such classes.

The success of the campaign can be illustrated by the fact that of all the children in Education Department schools who left Primary School at the end of 1967, 76 per cent can swim at least twenty yards.

## **INDUSTRIAL ACCIDENT PREVENTION**

The post-war growth of industrial activity in this State was accompanied by an increasing toll of injuries and fatalities sustained during the course of employment. Legislation requires certain minimum standards of safety in working conditions to be provided in various industries, and inspections are made to ensure compliance with legislative requirements. However, legislation and inspection are not the only means of minimising industrial accidents and in the late 1950s the South Australian Government implemented a programme of education for management, supervisors and employees in accident prevention measures, with the object of making all sections of industry more 'safety conscious'.

Safety officers employed in the Department of Labour and Industry actively pursue this policy by conducting safety training courses, presenting lectures, screening films and distributing industrial safety pamphlets produced within the department.

The National Safety Council of Australia S.A. Division which was formed in 1963 as the Industrial Accident Prevention Society of S.A. Inc., endeavours to interest all sections of industry in the need for planned accident prevention activities. These aims are being achieved by providing safety consultant services, training courses and the distribution of safety publications and materials. It is a non-profit organisation and its activities extend over all types of occupations in South Australia and the Northern Territory, not being confined to the manufacturing industries. Membership is by subscription and an annual grant is made by the South Australian Government.

In addition the Safety Engineering Society of Australasia, the Australian Institute of Management (Adelaide Division), the South Australian Institute of Technology and the Commonwealth Department of Labour and National Service make valuable contributions within their particular spheres of activities to the promotion of industrial safety. Further details relating to industrial accidents will be found in Part 7.4.

### THE NATIONAL SAFETY COUNCIL (S.A.) INCORPORATED

The National Safety Council had its origin in the Look Both Ways Club, which was formed at the turn of the century for the promotion of greater road safety. The Council was incorporated under its present name in 1930. Its aim is to co-ordinate and pursue means for the prevention of accidents and to educate the public to a greater sense of safety consciousness. The Council is controlled by a Committee of Management, and has subcommittees concerned with traffic, child and youth, industrial, rural, home, water and general safety.

### SOUTH AUSTRALIAN ROAD SAFETY COUNCIL

The South Australian Road Safety Council was formed in December 1965 as a result of a decision by State Cabinet. The Council, which has affiliation with the Australian Road Safety Council, has ten members appointed by Cabinet, an independent chairman and representation from the Police Department, the Education Department, the South Australian Railways Department, the Road Traffic Board, the Local Government Association, the Royal Automobile Association of South Australia, the Fire and Accident Underwriters' Association of South Australia and the Trades and Labor Council of South Australia.

During 1967-68 the Council received a \$12,000 grant from the State Government and a \$14,500 Commonwealth Government grant for road safety practices.

## 6.2 EDUCATION

In South Australia attendance at school is compulsory for children from six to fifteen years of age. Children who are five years of age by the last day of February may be admitted to State schools on the first school day in February; children who are five years of age on or before 2 July may be admitted on the first Monday after the last Saturday in June of that year.

Education at the primary and secondary level is available at State schools, controlled by the Education Department, and at private schools, most of which are denominational. The Education Department also controls the South Australian School of Art and the technical colleges. Roseworthy Agricultural College is conducted by the Department of Agriculture. The University of Adelaide, the Flinders University of South Australia and the South Australian Institute of Technology are independently controlled but are financially dependent on Government grants.

Facilities for adult education are provided by the Workers Educational Association, the University of Adelaide and the Education Department.

### Historical

The first school in South Australia was conducted on Kangaroo Island in 1836; a private venture, it closed after several months through insufficient financial support. In 1835 the South Australian School Society was formed in London with the object of establishing infant schools in the new colony. The Society's first and only school opened in Adelaide in 1838, and continued until 1843 when it was relinquished to private interests.

It was not until 1847 that the Government showed its first official interest in education by authorising the payment of a subsidy to approved teachers of \$2 per pupil per annum. The Education Act of 1851 went further and set up a Central Board of Education with power to license schools and teachers and also to make grants for school buildings and pay salaries of \$80 to \$200 per annum to licensed teachers. At this time parents with means customarily sent their children to private schools, of which there were a large number, most under the ownership of private citizens. There were also the church schools including St Peters School Collegiate (1847), Pulteney Street Church of England Grammar School (1848), Prince Alfred College (1869), and a number of Catholic schools.

The present system of State schools, controlled and supported by the Government, dates from the Education Act of 1875. This Act made attendance at school compulsory for the first time. The compulsion, however, applied only to children aged from seven to thirteen years, and required attendance for only seventy days a half-year. Fees ranging from 3c to 8c per week were charged, but exemption from payment was granted in cases of poverty. The payment of fees continued until 1892 for children under thirteen years of age, and until 1898 for those aged thirteen or more. In 1876 most of the licensed schools were taken over as State schools.

To provide secondary education for girls, the Education Department in 1879 opened the Advanced School for Girls; fees were charged and the school was self-supporting. In 1897 the Education Department opened a secondary school for boys—the Agricultural School, which was closed after five years, and subsequently re-opened in 1903 under the auspices of the School of Mines and Industries as the Adelaide Technical High School.

The State's present extensive system of secondary schools dates from 1907 when continuation classes were started at seven country primary schools. In the following year these classes were made district high schools, although still attached to primary schools. In the same year the Adelaide Continuation School was opened, to be amalgamated a few months later with the Advanced School for Girls as the Adelaide High School.

In 1915, following a royal commission on education, attendance at school was made compulsory for five days per week for children aged six to fourteen years. At the same time provision was made for technical education, and for a further expansion of secondary education.



In 1920 the Correspondence School was started, and in 1922 a number of primary schools became higher primary schools, thus making secondary education available in the more remote country areas. The present technical high schools originated in 1925, when many of the large metropolitan primary schools were made central schools, giving courses of secondary education.

The last twenty-five years have seen a policy of consolidation of country schools; over 400 small schools have been closed and bus services to centrally situated schools provided instead.

Various institutions for tertiary education developed alongside the State school system. In 1861 the South Australian School of Art was founded, coming under the control of the Education Department in 1909. The University of Adelaide was established by Act of Parliament in 1874 and began academic work two years later. In 1883 Roseworthy Agricultural College was opened, and in 1889 the School of Mines and Industries, later to become the South Australian Institute of Technology, was established. The present system of training for apprentices began with the Technical Education of Apprentices Act of 1917.

### PRE-SCHOOL EDUCATION

The kindergarten movement in South Australia was founded in 1905. Until the end of the 1939-45 War kindergartens were primarily designed for the care and education of under-privileged children. Since 1946 they have become generally accepted as a phase of education, with a consequent rapid increase in facilities.

Although some independent kindergartens are conducted by private individuals, or by private schools, the vast majority of pre-school education is under the supervision of the Kindergarten Union of South Australia (Inc.). This organisation has a twofold function: firstly in the training of kindergarten teachers (see page 181), and secondly in the supervision of over 120 kindergartens situated throughout the State.

While the supervision covers various aspects of organisation it is largely concerned with the educational programme. As well as encouraging the creative, physical and mental development of the four to five years old child the kindergarten prepares him for the experiences of formal schooling. Sessions are generally of two and a half to three hours duration each day, with enrolments limited to thirty children per session. In most cases two sessions are held daily thus providing for sixty children.

#### Kindergartens<sup>(a)</sup>, South Australia

Year	Kinder- gartens (b)	Instruc- tors	Children: Average Atten- dance	Receipts			Expenditure		
				Govt Aid	Other	Total	Salaries	Other	Total
	No.	No.	No.	\$	\$	\$	\$	\$	\$
1964.....	120	328	4,760	404,514	290,570	695,084	494,770	233,682	728,452
1965.....	121	331	5,109	434,268	303,748	740,016	521,274	225,338	746,612
1966.....	124	343	5,105	483,002	328,546	811,548	583,973	232,549	816,522
1967.....	124	342	5,268	520,700	344,815	865,515	627,507	228,882	856,389
1968.....	125	348	5,337	547,000	366,868	913,868	637,629	266,833	924,462

(a) Schools administered by the Kindergarten Union of South Australia (Inc.).

(b) At end of period.

The Kindergarten Union, although a voluntary organisation, receives approximately 60 per cent of its revenue from a State Government grant. Part of this grant is in turn used to subsidise the salaries of teachers at individual

kindergartens. However, local committees are responsible for the construction, equipping and maintenance of their own kindergartens, revenue for these purposes coming from either direct contributions or various fund raising activities.

### GENERAL SCHOOL EDUCATION

The State Government, through the Education Department, provides free facilities for primary and secondary education; however, parents may choose between State and private schools. The Education Department functions under the Minister of Education. The permanent head of the department is the Director-General of Education, assisted by a Deputy Director-General of Education and Directors of Primary Education, Secondary Education, Technical Education, Teacher Education and Services, and Administration and Finance. Northern Territory schools, other than those provided by the Northern Territory Administration expressly for the education of Aborigines in remote areas, are also controlled by the Education Department on behalf of the Commonwealth Government, with a Director stationed at Darwin.

The work of the schools is materially assisted by the school councils and committees, and also by the mothers clubs, parents and friends associations and welfare clubs. These bodies have for many years been instrumental in raising large sums for the purchase of additional amenities for the schools.

In country areas many children are conveyed to State schools by free bus services provided by the Education Department. At the end of 1968 there were 641 bus services carrying 25,082 pupils daily to 316 schools.

Although private primary schools largely follow the State schools in their curricula, the Education Department exercises no formal authority over these schools beyond requiring them to submit certain statistical returns relating to compulsory attendance.

By arrangement with the controlling authorities, inspectors of schools visit non-departmental primary schools biennially for advisory purposes. Secondary inspectors visit non-departmental schools only when the school first applies for recognition as an approved school for the receipt of allowances by its students. The similarity between courses in the State and private secondary schools is due to the influence of the Public Examinations Board of South Australia syllabus and the close liaison of the administration and teachers of both types of school.

The Catholic school system is organised on a diocesan basis, South Australia being divided into two dioceses, Adelaide and Port Pirie. Within the former, supervision is exercised by the Archbishop through the Director of Catholic Education and Inspector of Schools; within the latter, by the Bishop through his Inspector of Schools.

The State Government now pays a grant of \$10 per annum to each primary and secondary student liable to pay fees at an approved private school.

### Schools

Details of schools operating in South Australia in 1968 are given in the next table. The average size of State schools has increased rapidly since 1940 partly as a result of the consolidation of country schools. The 663 State schools in 1968 compared with 1,043 in 1940 and 1,108 in the peak year of 1935. In 1940 there was an average of 73 pupils to each State school, with this figure increasing to 125 by 1950, 255 by 1960 and 345 by 1968. There has been a similar movement in the average size of private schools.

## SOCIAL ENVIRONMENT

## Schools by Size, South Australia

At 1 August 1968

Pupils on Roll	State Schools					Private Schools
	Primary	Primary-Secondary	Secondary	Special (a)	Total	
Under 21 .....	66	—	—	12	78	7
21 to 35 .....	66	—	—	8	74	8
36 to 100 .....	118	7	—	14	139	39
101 to 200 .....	40	10	5	1	56	52
201 to 300 .....	28	14	9	—	51	28
301 to 400 .....	21	10	10	1	42	14
401 to 600 .....	44	8	20	—	72	11
601 to 800 .....	44	4	20	—	68	10
801 to 1,000 .....	26	2	9	—	37	2
1,001 to 1,200 .....	21	—	4	—	25	—
1,201 to 2,000 .....	9	—	12	—	21	—
Total .....	483	55	89	36	663	171

(a) Occupation centres, schools at institutions, subsidised schools and schools for Aborigines.

## Teachers

The numbers of teachers employed in primary and secondary schools in recent years are shown in the following table. A rapid expansion in the school population in the post-war period necessitated a considerable increase in teaching staff. The 9,021 full-time and 547 part-time teachers at State schools in 1968 compares with 2,634 and 291 in 1946. The number of females employed as teachers has increased more rapidly than males, and whereas females constituted 46 per cent of the full-time teaching staff in State schools in 1946, in 1968 they represented 57 per cent.

## Teachers, South Australia

At 1 August	State Schools				Private Schools			
	Full-time		Part-time		Full-time		Part-time	
	Males	Females	Males	Females	Males	Females	Males	Females
1964.....	2,977	4,363	23	454	389	842	68	261
1965.....	3,246	4,626	18	450	401	851	64	291
1966.....	3,444	4,745	35	446	419	887	69	302
1967 .....	3,653	5,016	63	587	429	886	72	324
1968.....	3,854	5,167	36	511	435	884	61	335
Type of School : 1968								
Primary.....	1,507	3,385	1	258	46	407	15	114
Prim.-Secondary .	465	386	—	22	225	412	37	196
Secondary.....	1,825	1,304	35	231	164	61	9	24
Special (a) .....	57	92	—	—	—	4	—	1

(a) Includes occupation centres, schools at institutions, subsidised schools and schools for Aborigines.

**Pupils**

School enrolments, which had been declining since 1932, started to rise rapidly at the end of the 1939-45 War, and since 1945 have more than trebled. Enrolments in recent years, classified by State and private schools and by age of the pupil, are given below.

**Primary and Secondary Pupils, South Australia***At 1 August*

Age	At State Schools				At Private Schools			
	1965	1966	1967	1968	1965	1966	1967	1968
5.....	15,884	16,512	16,743	16,775	2,581	2,391	2,203	2,243
6.....	19,452	20,347	20,593	19,998	3,145	3,118	2,917	2,684
7.....	18,656	19,764	20,430	20,827	3,020	3,106	2,950	2,929
8.....	18,810	19,285	19,984	20,503	3,160	3,037	3,016	2,863
9.....	18,443	19,115	19,442	20,380	3,042	3,103	2,993	2,959
10.....	18,072	18,928	19,293	19,568	3,131	3,041	3,167	3,069
11.....	17,947	18,385	18,839	19,366	3,137	3,078	3,115	3,068
12.....	17,894	18,106	18,385	18,819	3,337	3,382	3,445	3,231
13.....	17,451	18,261	18,257	18,402	3,405	3,393	3,396	3,292
14.....	17,078	17,579	18,366	18,221	3,241	3,252	3,153	3,037
15.....	13,093	13,500	14,355	15,270	2,875	2,901	2,856	2,997
16.....	6,829	7,741	8,547	9,353	2,036	2,195	2,235	2,329
17.....	2,428	2,345	3,100	3,575	1,110	950	1,232	1,307
18.....	599	567	700	962	392	240	324	405
Total ....	202,636	210,435	217,034	222,019	37,612	37,187	37,002	36,413

A division of enrolments in 1968 between primary and secondary levels is set out below. In 1945 approximately 17 per cent of total enrolments were at the secondary level; by 1968 this figure had risen to just over 30 per cent. This table also illustrates the somewhat greater involvement of private schools at the secondary level where they account for some 17 per cent of enrolments as opposed to 13 per cent at the primary level.

**Primary and Secondary Pupils***At 1 August 1968*

Age	At State Schools			At Private Schools			Total Pupils
	Primary	Secondary	Total	Primary	Secondary	Total	
5.....	16,775	—	16,775	2,243	—	2,243	19,018
6.....	19,998	—	19,998	2,684	—	2,684	22,682
7.....	20,827	—	20,827	2,929	—	2,929	23,756
8.....	20,503	—	20,503	2,863	—	2,863	23,366
9.....	20,380	—	20,380	2,959	—	2,959	23,339
10.....	19,568	—	19,568	3,069	—	3,069	22,637
11.....	19,343	23	19,366	3,054	14	3,068	22,434
12.....	13,428	5,391	18,819	2,231	1,000	3,231	22,050
13.....	3,255	15,147	18,402	642	2,650	3,292	21,694
14.....	823	17,398	18,221	127	2,910	3,037	21,258
15.....	191	15,079	15,270	11	2,986	2,997	18,267
16.....	74	9,279	9,353	2	2,327	2,329	11,682
17.....	72	3,503	3,575	—	1,307	1,307	4,882
18.....	94	868	962	—	405	405	1,367
Total ..	155,331	66,688	222,019	22,814	13,599	36,413	258,432

## PRIMARY EDUCATION

Children normally begin their schooling at the age of five years when they enrol for primary education at either a State or private school (see page 152). Primary education involves a seven year course.

## STATE SCHOOLS

Metropolitan children attend primary schools while country children normally attend a primary or an area school, although those in remote areas may receive lessons by correspondence.

The following table shows the number of primary and area schools operating in recent years and the number of primary pupils enrolled at State schools.

State Primary Education, South Australia

At 1 August	Schools			Pupils Enrolled					
	Primary		Area (a)	Primary Schools		Area Schools (a)	Corres- pondence School	Other (b)	Total
	With Infant Dept	Total		Infant Depts	Other				
1964.....	86	516	39	25,034	105,502	9,752	858	1,250	142,396
1965.....	90	520	40	27,136	107,397	9,932	756	1,454	146,675
1966.....	90	507	48	27,735	110,883	10,814	576	1,487	151,495
1967.....	90	494	50	27,372	113,264	11,142	620	1,576	153,974
1968.....	90	517	54	26,363	115,137	11,466	693	1,672	155,331

(a) Includes also special rural schools from 1966. The figures for pupils enrolled include primary pupils only.

(b) Includes Aboriginal schools, schools for handicapped children and schools at institutions.

## Primary Schools

Children begin in either the infant department of a large school or in Grade I of a smaller school, school sizes varying from over 1,000 pupils to as few as ten pupils.

At the beginning of 1968, ninety primary schools had separate infant departments. In these departments the children progress through Grades I and II. It is in the infant departments, and Grades I and II of other primary schools, that children are first formally introduced to books, music, numbers, colour, and form and movement. Rhythm and organised games form an important part of infant activity.

The primary school curriculum is not rigid but specifies a general framework under the headings of English, arithmetic, creative art and craft, and 'other life interests' which include social studies, nature study, music, physical education and religious instruction. Within this framework teachers select and arrange studies to meet their pupils' needs.

School libraries form an integral part of the primary education system, as do facilities for showing films, and for listening to the school broadcasts, and viewing television programmes provided by the Australian Broadcasting Commission. Facilities are also available for physical education and various forms of craft-work.

**Area Schools and Special Rural Schools**

These schools, situated in country centres, cater for both primary and secondary pupils. The primary course is similar to that of the primary schools.

**Correspondence School**

The Correspondence School was started in 1920 to cater for children unable to attend ordinary schools. Most of such children live in remote parts of South Australia and the Northern Territory, but there are others who cannot attend school through invalidity.

Connected with the Correspondence School are the 'Schools of the Air' at Port Augusta and Alice Springs which provide two-way radio communication between teacher and pupils and so supplement the correspondence lessons.

At 1 August 1968 there were 327 boys and 366 girls receiving primary education through the Correspondence School. Of these, 96 boys and 119 girls were living in the Northern Territory.

**PRIVATE SCHOOLS**

At 1 August 1968, 22,814 children were receiving primary education through private schools. The majority of these children were attending Catholic schools (see table on page 164).

**Catholic Schools**

Most children in the Catholic school system receive their primary education in parochial schools. Such schools are parochial property and the parochial authorities are responsible for the buildings, maintenance and equipment. Elected parish school boards assist in the financial administration of these schools and determine the fees that will be charged as well as the concessions or non-payment of fees for parents who are in financially necessitous circumstances.

In addition to the visits by the departmental inspectors (see page 155) Catholic primary schools are visited by the Catholic school inspector.

A number of children receive their primary education in the private colleges for boys and girls. These colleges are fee-charging.

**Other Schools**

Primary schools are conducted by the Church of England, the Lutheran Church, and the Seventh-Day Adventists Church. Primary education is also provided in preparatory schools attached to secondary schools run by the Church of England, the Methodist Church and the Presbyterian Church, and at two schools under private ownership.

**SCHOOLS FOR HANDICAPPED CHILDREN**

The Education Department, through the Psychology Branch, makes provision for children suffering from mental or physical disability. The Psychology Branch provides advice for parents and teachers of backward children and problem children, many of whom are helped in the Opportunity and Remedial Classes conducted at some of the large primary schools. There are also twelve Occupation Centres for children with serious mental deficiency, and a Sheltered Workshop Training Centre for mentally retarded adolescents.

For children with severely defective hearing there are seven Speech and Hearing Centres, and there is provision for hard-of-hearing children at ordinary schools. Speech therapists are available to help children with defective speech.

The Education Department conducts schools at Minda Home for the mentally retarded, Townsend House for blind, deaf and dumb children, Somerton Crippled Childrens Home and Estcourt House convalescent home. The school at the Woodville Spastic Home is privately managed but employs a departmental officer as Head Teacher.

A number of private agencies also provide educational facilities for handicapped children.

## SECONDARY EDUCATION

Children who have completed their primary schooling are required by law to attend a secondary school until the end of the term in which they reach their fifteenth birthday. Secondary education may be obtained at either State or private schools.

### STATE SCHOOLS

The Education Department provides several kinds of secondary schools. Metropolitan pupils may choose between high schools and technical high schools, but are required to attend schools within the zone in which they reside. In the country, secondary education is provided by high schools in most of the larger towns, and by high, area or special rural schools in many of the smaller centres; only one of these schools is located in any one centre. There are, however, technical high schools at Mount Gambier and Whyalla, and certain pupils may use the facilities of the Correspondence School.

#### State Secondary Schools, South Australia

At 1 August	High		Technical High		Area (a)		Correspondence Pupils Enrolled (b)	Other Pupils Enrolled (c)
	Number of Schools	Number of Pupils Enrolled	Number of Schools	Number of Pupils Enrolled	Number of Schools	Number of Pupils Enrolled		
1964.....	53	33,964	26	14,033	39	3,936	107	178
1965.....	56	36,115	29	15,479	40	4,078	90	199
1966.....	58	37,376	29	17,033	48	4,307	114	110
1967.....	59	39,541	29	18,508	50	4,754	152	105
1968.....	59	41,839	30	19,467	54	5,014	143	84

(a) Includes also special rural schools from 1966.

(b) Full correspondence pupils only.

(c) Pupils receiving secondary education at primary schools, in Aboriginal schools, and in institutions.

### High Schools

High schools are provided in the metropolitan area and in most of the larger country towns. These schools are generally co-educational. High schools provide both academic and non-academic courses, with special provision for commercial subjects, and in some cases for instruction in craft subjects.

The general course is primarily concerned with preparing pupils for the South Australian Public Examinations Board (P.E.B.) examinations. A selection from English, mathematics, geography, history, foreign languages, sciences, social studies, drawing, woodwork, home science, physical education and music is the

curriculum of most schools, at least for selected classes. Organised sport is available in all schools, and dramatic work, opera, and other musical forms are common activities.

The actual course of study that the pupil undertakes is largely determined by a series of tests given within the first day or two at school. Pupils may sit for the Leaving and Matriculation P.E.B. examinations, or for an internal examination conducted by the Education Department. Matriculation classes are available only at certain high schools.

The commercial course also leads to the P.E.B. examinations and includes book-keeping, typewriting, English, geography, drawing, arithmetic, and in some cases shorthand. Pupils may sit for the Leaving examination, and many metropolitan high schools also offer a non-examination course in typing and commercial practice.

Agricultural science is taught in several country high schools. In addition Urrbrae Agricultural High School, in the metropolitan area, provides a secondary education for boys who aim to take up a career connected with agriculture. The School's syllabus includes agricultural science, farm mechanics and field work as well as the normal academic subjects. Boys who attend at Urrbrae may matriculate for university degree courses and for Roseworthy Agricultural College courses. Courses alternative to those of the P.E.B. are provided: a special fourth and fifth year course is being established leading to an Urrbrae Certificate.

Alternative courses, which do not lead to the P.E.B. examinations, are available at a number of high schools. These courses, which diverge from the general course at the beginning of the second year, have a strong practical bias. An Education Department certificate is granted on the results of an examination held at the end of the third year.

### **Technical High Schools**

Technical high schools combine academic and practical education. While aiming at a general secondary education for their pupils they put special emphasis on various forms of handwork. These schools are not normally co-educational.

Technical high school courses lead to the award of either the Leaving Technical Certificate or the Leaving Certificate of the P.E.B. in the fourth year. At Adelaide and Whyalla Technical High Schools pupils may also sit for the Matriculation examination of the P.E.B. after five years.

Courses at boys schools include English, science, mathematics, social studies, arts and crafts, technical drawing, woodwork and various forms of metalwork. For more able pupils planning to matriculate, additional academic subjects are available. The particular course that a boy undertakes depends on his interests, ability and aptitude, and also on his plans for tertiary education.

Girls schools teach certain academic subjects, various arts and crafts and commercial practice. All girls schools teach general science leading to physiology in the third year, and a foreign language is available to selected pupils. The arts and crafts subjects include art, dressmaking and home management. Commercial training, which commences in the second year, includes shorthand, typing, book-keeping and business practice. Special secretarial courses are available at Leaving Certificate level in a number of schools.

### **Area Schools**

Area schools are provided in certain country districts not served by high schools. They cater for both primary and secondary pupils and are co-educational.



In the first year of secondary education at area schools all pupils take a common course, after which some pupils study a general course on the same lines as those followed in high schools enabling them to sit for the P.E.B. Leaving examination thus leading to matriculation, while other pupils take a special area school course.

In addition to special courses in English, mathematics, science and social studies, the area school course syllabus includes metalwork, woodwork and art for boys and domestic science, needlework and art for girls. In an increasing number of area schools commercial studies are being introduced, while agricultural science has become a special feature of many of these schools.

In general, third year, and in most schools, fourth year area school courses emphasise rural interests and lead to Leaving Area School Certificates which are awarded by the Education Department.

### **Special Rural Schools**

These schools were first established in remote country areas from the beginning of 1966 with the intention of supplying a limited secondary education in areas where it had been shown that there was an obvious need for secondary education but where the establishment of an area school was not warranted. Currently, they are providing academic studies leading to a Departmental certificate at the end of the third year as a secondary 'top' to a normal primary school.

### **Correspondence School**

Children who are unable to attend any of the aforementioned secondary schools may receive secondary education through the Correspondence School.

Lessons are forwarded to cover nine academic subjects (all to Leaving Certificate standard), and also certain drawing subjects. Assistance may take the form of full correspondence or supplementary courses. Supplementary courses are conducted through a primary school Head Teacher, who may, in the case of remoteness from secondary school facilities, conduct grades beyond Grade VII. Correspondence lessons are supplemented by radio lessons from the 'Schools of the Air'.

At 1 August 1968 there were fifty-eight boys and eighty-five girls receiving secondary education through full correspondence courses; of these, twenty-one boys and eighteen girls were living in the Northern Territory.

## **PRIVATE SCHOOLS**

Secondary education is also provided by private schools. These schools, for the most part, are identified with various religious denominations. Private secondary schools usually charge fees; however, a limited number of internal scholarships are available and pupils may qualify for certain State scholarships. In addition to normal day attendance many private schools offer boarding facilities for country pupils.

Private schools provide academic courses preparing pupils for the P.E.B. examinations, and this determines their academic curricula for fourth and fifth years. Church schools give religious as well as secular education.

### Catholic Schools

The Catholic school system provides secondary education at boarding and day colleges in metropolitan and country areas.

There are no technical secondary schools, but both general and commercial courses are available to pupils for Leaving and Matriculation examinations. Home Science is taught in some girls schools and an agricultural college for boys is conducted at Mount Gambier where a theoretical and practical study of agriculture is combined with the regular secondary course.

Generally, Catholic secondary schools are the property of the religious communities who conduct them and are supported by the fees charged.

### Other Schools

The Church of England, the Methodist Church, the Lutheran Church and the Presbyterian Church all conduct secondary schools for boys and girls in the metropolitan area with most schools having facilities for boarders.

At boys schools, emphasis is on general academic and commercial courses. Scotch College, Mitcham, however, provides agricultural training for boys along with the normal academic subjects. Girls schools generally provide alternative courses for those pupils not academically inclined. In addition, all these schools offer a wide range of extra-curricular activities.

There are also two non-denominational schools for girls which offer facilities similar to those of the church schools.

Training in typing and shorthand is provided at privately owned business colleges which specialise in this field. A number of these colleges also prepare pupils in certain P.E.B. subjects.

### Summary

The following tables give details of all private schools and cover both primary and secondary education.

**Private Schools<sup>(a)</sup>, South Australia**

Year	Number of Schools	Number of Teachers (b)	Pupils on Roll, 1 August				
			Primary		Secondary		Total
			Males	Females	Males	Females	
1964.....	170	1,560	12,048	12,713	6,261	6,629	37,651
1965.....	172	1,607	11,979	12,626	6,416	6,591	37,612
1966.....	172	1,677	11,756	12,432	6,429	6,570	37,187
1967.....	173	1,711	11,422	12,111	6,749	6,720	37,002
1968.....	171	1,715	10,971	11,843	6,883	6,716	36,413

(a) Excluding business colleges.

(b) Includes part-time teachers.

In the next table private school pupils are classified according to the denominational affiliation of the school they attended. The predominant contribution of Catholic schools is clearly evident from the table. In 1968 Catholic schools accounted for 81 per cent of primary pupils and 50 per cent of secondary pupils attending private schools.

**Pupils at Private Schools, South Australia***At 1 August*

Denomination of School	1964	1965	1966	1967	1968
<b>Primary :</b>					
Catholic .....	20,308	20,249	19,843	19,253	18,634
Church of England .....	1,771	1,753	1,738	1,655	1,567
Lutheran .....	893	871	933	961	985
Methodist .....	567	560	544	535	529
Presbyterian and Baptist/ Congregational .....	665	643	629	625	615
Seventh Day Adventist .....	116	100	91	129	114
Undenominational .....	441	429	410	375	370
<b>Total primary .....</b>	<b>24,761</b>	<b>24,605</b>	<b>24,188</b>	<b>23,533</b>	<b>22,814</b>
<b>Secondary :</b>					
Catholic .....	6,313	6,314	6,369	6,712	6,791
Church of England .....	2,290	2,409	2,442	2,462	2,522
Lutheran .....	603	625	562	583	560
Methodist .....	1,409	1,482	1,516	1,569	1,627
Presbyterian and Baptist/ Congregational .....	1,308	1,284	1,255	1,275	1,262
Seventh Day Adventist .....	32	40	38	48	51
Undenominational .....	935	853	817	820	786
<b>Total secondary ...</b>	<b>12,890</b>	<b>13,007</b>	<b>12,999</b>	<b>13,469</b>	<b>13,599</b>

**EXAMINATIONS AND SCHOLARSHIPS****Examinations**

In addition to internal examinations conducted by the schools there are a number of external examinations.

After four years secondary study the pupil normally sits for the Leaving examination of the Public Examinations Board of South Australia, or for an examination conducted by the Education Department.

The Public Examinations Board conducts a further examination at the completion of the fifth year. Before 1966 this examination had been known as the Leaving Honours examination and while considered a desirable fore-runner to university study had not been compulsory for entrance to the University of Adelaide, (matriculation being based on the Leaving examination). Commencing with 1966 this examination became the Matriculation examination.

Prior to 1966 the P.E.B. had given a certificate for a pass in the required number of subjects at either the Intermediate or Leaving examinations and for a pass in one or more subjects in the Leaving Honours examination. From 1966 the Board has issued to each Intermediate, Leaving and Matriculation examinee a certificate showing the grade achieved in each of the subjects in which examined. The last P.E.B. Intermediate examination was held in 1968. The total number of candidates for examination by the Board in one or more subjects in 1967 were Intermediate 13,881, Leaving 11,111 and Matriculation 5,128.

**Scholarships**

The Commonwealth Government, the State Government and various private benefactors provide a variety of scholarships each year for South Australian pupils.

*Secondary Scholarships*

On the completion of primary schooling, secondary pupils, whether at State or private schools, are entitled to a book allowance of \$16 per annum for the first three years, and \$18 and \$20 for the fourth and fifth years respectively. In 1967-68, \$1,321,941 was paid in secondary book allowances. Pupils who have to travel considerable distances to the nearest suitable school, or school bus, may also receive travelling expenses or, if forced to live away from home, a boarding allowance. The boarding allowance is \$150 per annum increasing to \$200 in the Matriculation year.

In 1965 the Commonwealth Government introduced scholarships to cover the last two years of secondary education. These scholarships, of which 976 were available in South Australia in 1968, are awarded on the results of a special Australian Council for Educational Research (A.C.E.R.) examination conducted in July of the third year of secondary education. The scholarships, which are tenable at any approved government or non-government school, are free of a means test and offer a \$200 living allowance, a \$50 book allowance, and up to \$150 re-imbursement for fees paid, in each year. Technical scholarships are offered to pupils in the Leaving year on the basis of results in the A.C.E.R. examination and are tenable in approved courses at the South Australian Institute of Technology, the South Australian School of Art and Roseworthy Agricultural College. From the beginning of 1968, these scholarships have also been offered to pupils in the Matriculation year, to pupils already enrolled in approved courses and to apprentices who are qualified to enrol in an approved course. For full-time study, benefits are the same as the secondary scholarships; for part-time study, pupils receive \$100 living allowance and a re-imbursement for fees paid. On the last school day of 1968 there were 1,853 pupils studying with the assistance of secondary scholarships, and a further 308 with technical scholarships.

The State Government offers three classes of exhibitions to encourage pupils to remain at school after the third year. These exhibitions have been awarded, through the Scholarships Section of the Education Department, on the results of the Intermediate examinations of the Public Examinations Board and the Education Department. A predetermined number of exhibitions has been reserved each year for country pupils. In 1969 there were awarded 200 Intermediate exhibitions on P.E.B. certificate results, 60 Intermediate Technical exhibitions on Technical certificate results, and 400 Continuation exhibitions on P.E.B. or Area School certificate results. Intermediate and Continuation exhibitions pay \$50 for the fourth year and \$60 for the fifth year of secondary education, Intermediate Technical exhibitions pay \$50 for the fourth year only.

The Education Department also awards teaching scholarships (see pages 181-2).

The Commonwealth Government, through the Soldiers' Children Education Scheme, offers assistance at the secondary level to children of ex-servicemen whose death, blindness or total and permanent incapacity was the result of war service. Eligible children, upon reaching twelve years of age, qualify for a fortnightly allowance while attending school. Where appropriate, a living-away-from-home allowance is also paid, and the payment of allowances is subject to satisfactory attendance and progress. At 1 January 1969 weekly allowances were \$2.18 at ages twelve and thirteen, \$3.30 at ages fourteen and fifteen and \$7.28 at ages sixteen and over, if living at home; and \$7.28 at ages twelve to fifteen

and \$11.25 at ages sixteen and over if living away from home. Pupils aged sixteen and over whose father died before they turned sixteen receive \$8.70 if living at home or \$17.65 if living away from home. The pupil receives guidance and advice on his course of studies from the Soldiers' Children Education Board.

Government scholarships are tenable at both State and private schools and the latter also award a limited number of internal scholarships carrying free tuition. The Scholarships Section of the Education Department also administers a number of privately endowed scholarships.

### *Tertiary Scholarships*

The Commonwealth Government, through the Commonwealth Scholarships Board, each year offers two types of scholarships at the tertiary level; University scholarships and Advanced Education scholarships. University scholarships are tenable only in approved university courses and are either Open Entrance scholarships, Later Year scholarships or Mature Age scholarships. Advanced Education scholarships are tenable only in approved non-university tertiary courses at the South Australian Institute of Technology, Roseworthy Agricultural College, Education Department Teacher Training Colleges, and the Kindergarten Training College; these are either Open Entrance or Later Year scholarships.

**Commonwealth Tertiary Scholarships, South Australia<sup>(a)</sup>**

Year	New Awards Accepted			Students in Training at 30 June	Expenditure (Year ending 30 June)		
	University	Advanced Education	Total		Fees	Living Allowance	Total
					\$	\$	\$
1964.....	<i>n.a.</i>	<i>n.a.</i>	590	1,335	327,474	244,106	571,580
1965.....	<i>n.a.</i>	<i>n.a.</i>	634	1,538	326,226	417,624	743,850
1966.....	821	113	934	1,827	561,161	325,780	886,941
1967.....	484	32	516	2,343	652,478	413,883	1,066,361
1968.....	829	100	929	2,595	1,058,092	561,017	1,619,109

(a) Includes pupils who live in Northern Territory and sit for the P.E.B. examinations.

*n.a.*—Not applicable.

Students awarded a Commonwealth scholarship are entitled to the payment of certain fees and allowances without a means test. In addition, full-time students may be granted a living allowance in accordance with a prescribed means test. At 1 January 1969 the maximum annual allowance was \$559 for a student living at home and \$904.80 for a student living away from home.

Students under the Soldiers' Children Education Scheme may receive a basic allowance of \$10.75 per week, plus all fees, travelling expenses and costs of necessary text books and equipment while undergoing tertiary education. Additional expenses are paid if the student is living away from home or supporting a family.

Subject to income limits, students undergoing industrial training receive a basic allowance of \$2.65 per week plus the cost of Trade School requisites.

**Soldiers' Children Education Scheme, South Australia<sup>(a)</sup>**

Year	Number of Beneficiaries in Training (b)				Expenditure on Benefits		
	Primary and Secondary	Tertiary	Industrial	Total	Allowances	Fees, Books, Equipment and Fares	Total
					\$	\$	\$
1963-64 ..	680	118	114	912	184,072	29,452	213,524
1964-65 ..	678	150	127	955	176,722	42,452	219,174
1965-66 ..	636	128	136	900	189,973	43,848	233,821
1966-67 ..	629	126	131	886	182,131	50,805	232,936
1967-68 ..	637	148	154	939	191,282	57,030	248,312

(a) Includes Northern Territory.

(b) Beneficiaries twelve years and over. Number at end of year.

The University of Adelaide and the Flinders University award a number of prizes, grants and scholarships each year, details of which are given in the Calendars of the respective Universities. Many students also receive assistance at the tertiary level through studentships offered by government departments and private firms (for teaching studentships see pages 181-2).

The South Australian Government's Fees Concession Scheme provides financial assistance in the form of a loan only or of a combination of loan and grant to eligible students (at the Universities or undertaking tertiary courses at the South Australian Institute of Technology) whose fees are not met by scholarships, cadetships, or similar awards or by employers. Eligibility for and the amount of assistance are determined in accordance with a prescribed means test. The nature of the course determines the form of assistance.

A number of adults receive training through three Commonwealth Training Schemes currently operating in South Australia. The schemes, the Korea and Malaya Training Scheme, the Disabled Members and Widows Training Scheme, and the Social Services Training Scheme, are administered by the Technical Branch of the Education Department.

**TERTIARY EDUCATION****THE UNIVERSITY OF ADELAIDE**

The University was founded by Act of Parliament in 1874 and began its academic work in 1876. From its inception it admitted women on equality with men. Its original staff was four professors, three part-time lecturers and a registrar-librarian. Students in 1876 numbered eight undergraduates and fifty-two others, and the curriculum was confined to arts and science. Within a decade law, music and medicine were added; in 1888 studies in engineering were instituted in collaboration with the South Australian School of Mines and Industries; and at the turn of the century the University broke new ground for Australian universities by founding a conservatorium of music and by instituting studies in commercial subjects. Between the two wars the Waite Agricultural Research Institute and faculties of dentistry and economics were established, studies in agricultural science and engineering greatly developed, and diploma courses in pharmacy, public administration and physical education instituted.

Foreseeing that growth on its small city site would be severely restricted by 1966, the University planned extension of its work to a new site at Bedford Park with a separate staff and over 400 first-year students in arts and science and some post-graduate students in that year. The State Government, however, decided to make the institution at Bedford Park an independent university, and The Flinders University of South Australia was formally constituted on 1 July 1966.

The governing body of the University of Adelaide is the Council, comprising the Chancellor and the Vice-Chancellor (*ex officio*), twenty members elected by the graduates of the University of at least three years standing, and five members appointed by Parliament. The principal advisory committees of the Council are the Education Committee and the Finance Committee each of which is appointed by the Council. There is also the usual university structure of faculties, boards of studies and special committees to advise on particular aspects of the University's work.

As can be seen from the following table the University is largely supported by Government grants; they constituted 87 per cent of total revenue and capital receipts for 1967 while student fees yielded less than 12 per cent.

The University of Adelaide<sup>(a)</sup>, Finance

Particulars	1963	1964	1965	1966	1967
	\$'000				
Revenue :					
Government grants :					
State .....	3,072	3,797	4,480	4,149	4,659
Commonwealth .....	2,005	2,407	2,769	2,953	3,055
Fees .....	718	792	1,160	1,227	1,207
Interest and dividends .....	117	104	114	123	136
Other income .....	69	77	80	49	42
Total .....	5,982	7,177	8,603	8,501	9,099
Expenditure .....	6,029	7,770	7,908	8,469	8,938
Capital receipts :					
State .....	878	1,060	185	158	684
Commonwealth .....	878	1,060	185	158	684
Capital expenditure .....	2,489	1,667	393	615	1,435
Net increase in endowments ....	68	17	188	165	64

(a) Includes Waite Agricultural Research Institute.

In 1968 the University had 11 faculties: arts (10 departments); economics (2); science (16); agricultural science (6); engineering (4); medicine (7); law; music; dentistry; architecture and town planning; and technology and applied science. It also provided diploma courses in physical education, physiotherapy, and public administration. Higher degrees were provided in all faculties except technology.

Intending students are normally required to have passed the Matriculation examination in a prescribed range of subjects. Interstate and overseas students, however, may be accepted on alternative qualifications.

The period of study ranges from three years for certain degree and diploma courses to six years for medicine. Fees for full-time students were increased in 1968 to approximately \$345 a year a student taking an arts-type course, \$390 a year for a science-type course, and \$420 a year for dentistry and medicine. These fees entitle students to tuition and access to the Library and to the various facilities of the University Union and the Sports Association. Students, however, may obtain financial assistance in a number of ways; see pages 166-7. Provision is also made in certain faculties for part-time students who pay reduced fees.

The original full-time academic staff of four in 1876 had grown by June 1968 to 65 professors, 58 readers, 158 senior lecturers, 162 lecturers, and 69 tutors and demonstrators. Teaching by part-time staff amounted in 1968 to 68,900 hours. Part-time staff were mainly engaged in large first-year science classes involving laboratory work, in the faculties of engineering, law, medicine and dentistry, and in the physiotherapy course.

During the last decade significant changes have occurred in the composition of the student body. The proportion of full-time students has steadily risen, and the proportion taking diploma courses and part-time studies steadily declined. The most significant change, however, has been in the numbers of students proceeding to honours and higher degrees; here the rate of growth is double that of undergraduate enrolments. Details of student enrolments are given in the next two tables.

The University of Adelaide, Enrolments<sup>(a)</sup>

Course	1964	1965	1966	1967	1968
Higher degree candidates .....	535	606	649	727	747
Undergraduate, diploma, certificate and miscellaneous students:					
Agricultural science .....	89	105	147	139	180
Applied science .....	74	86	111	172	199
Architecture .....	148	184	196	186	180
Arts .....	2,731	2,770	2,775	2,640	2,564
Dentistry .....	164	188	217	211	202
Economics .....	521	557	539	459	465
Engineering .....	430	464	536	542	532
Law .....	336	382	392	359	366
Medicine .....	640	640	593	634	617
Music .....	57	57	60	73	80
Pharmacy (degree) .....	(b)	59	85	142	137
Science .....	1,297	1,436	1,466	1,436	1,376
Technology .....	594	585	672	656	592
Pharmacy (diploma) .....	204	143	128	56	16
Physical education .....	138	131	150	134	132
Physiotherapy .....	81	81	91	94	82
Social studies .....	135	175	106	68	23
Miscellaneous (S.A.I.T.) (c) ..	29	9	34	100	101
Elder Conservatorium (d) ..	431	452	434	339	292
Total .....	8,634	9,110	9,381	9,167	8,883

(a) Each student is counted once only; in the category appropriate to his principal course.

(b) Pharmacy degree course introduced in 1965.

(c) Students enrolled in subjects as part of a diploma course at the South Australian Institute of Technology.

(d) Students not also enrolled for degree or diploma subjects.



The University of Adelaide, Enrolments<sup>(a)</sup>, 1968

Course	New Students	All Students				
		Full-time	Part-time	External	Staff	Total
Higher degree candidates .....	149	380	250	—	117	747
Undergraduate, diploma, certificate and miscellaneous students:						
Agricultural science .....	69	167	13	—	—	180
Applied science .....	68	116	82	1	—	199
Architecture .....	30	157	23	—	—	180
Arts .....	409	1,150	1,257	157	—	2,564
Dentistry .....	29	196	6	—	—	202
Economics .....	91	183	281	1	—	465
Engineering .....	117	491	41	—	—	532
Law .....	78	303	62	1	—	366
Medicine .....	79	604	13	—	—	617
Music .....	27	67	13	—	—	80
Pharmacy (degree) .....	36	105	32	—	—	137
Science .....	341	1,044	332	—	—	1,376
Technology .....	82	252	338	2	—	592
Pharmacy (diploma) .....	—	14	2	—	—	16
Physical education .....	29	110	16	6	—	132
Physiotherapy .....	25	81	1	—	—	82
Social studies .....	—	5	18	—	—	23
Miscellaneous (S.A.I.T.) <sup>(b)</sup> ..	36	2	99	—	—	101
Elder Conservatorium <sup>(c)</sup> ...	79	—	292	—	—	292
Total .....	1,774	5,427	3,171	168	117	8,883

(a) Each student is counted once only; in the category appropriate to his principal course.

(b) Students enrolled in subjects as part of a diploma course at the South Australian Institute of Technology.

(c) Students not also enrolled for degree or diploma subjects.

From its inception until the end of 1968 the University had conferred 15,726 degrees and 6,254 diplomas by examination. The growth of the University in recent years is indicated by the number of degrees and diplomas awarded in 1968 which totalled 1,533, compared with 500 in 1958.

The over-all controlling body of student activities outside the classroom is the Union Council, comprised of representatives of the students, graduates, staff and Council of the University. The Union Council receives the annual fee \$45 (pro rata for part-time students) payable by all students proceeding to a degree or diploma; from this income it makes grants to the Sports Association for the maintenance of nearly forty sporting clubs and to the Students' Representative Council for the support of some fifty student societies. It is also responsible for the Union buildings, including the three refectories and Union Hall. The Union buildings aggregate about 48,500 sq ft of floor space; the playing fields available to the Sports Association cover about 60 acres.

The residential colleges are independent bodies affiliated with the University. The three colleges for men were founded by churches, but impose no denominational restrictions on admission; the womens college has no denominational affiliation. All four are situated in North Adelaide within easy walking distance of the University. Their names, church affiliations, years of founding and residential capacities are:

St Mark's .. . . .	Anglican .. . . .	1925	146 students,	7 tutors
St Ann's .. . . .	Non-denominational ..	1947	107 students,	8 tutors
Aquinas .. . . .	Catholic .. . . .	1948	95 students,	18 tutors
Lincoln .. . . .	Methodist .. . . .	1952	125 students,	8 tutors

In 1968 a fifth residential college, Kathleen Lumley College, was established for post-graduate students. In its initial stage, the College provides residential accommodation for about twenty students and a cultural and social centre for all post-graduate students.

### **The Library**

The central library of the University is named the Barr Smith Library in honour of its original benefactor, Robert Barr Smith, and his son, Tom Elder Barr Smith. During his life Robert Barr Smith provided \$18,000 for the purchase of books and members of his family gave the University the sum of \$22,000 in 1920 in his memory. Tom Elder Barr Smith provided the first part of the present building in 1930 at a cost of nearly \$70,000.

In addition to the central library there are branch libraries for law, medicine, music and the Waite Agricultural Research Institute. Borrowing facilities are available to staff, students and graduates.

Holdings at the end of 1968 were as follows: central library 367,149 volumes; law library 23,984; medical library 56,685; music library 5,371 (and 10,394 pieces of music in sheets); and the Waite Agricultural Research Institute 23,363; making total holdings of 476,552 volumes.

During 1968 the Library made 175,749 loans to students, staff and graduates; 12,133 to other libraries in South Australia; and 4,335 to libraries in other States. It received 1,615 loans from other libraries. Accessions totalled 30,143 and withdrawals numbered 911. Serial titles received exceeded 15,400. Expenditure on staff, books, journals, binding and other library purposes amounted to \$549,000 or 5.7 per cent of total university revenue expenditure.

### **The Waite Agricultural Research Institute**

The Waite Agricultural Research Institute was established, within the University of Adelaide, in 1924. The foundation of the Waite Institute was made possible by a gift of land and property at Glen Osmond together with an endowment from Mr. Peter Waite. The Institute has received a number of endowments subsequent to this original gift and these have been used to assist in the establishment of additional laboratories and other research and teaching facilities. A recent gift of about 700 acres of land at Mintaro, near Clare, has enabled the development of the Mortlock Experiment Station which provides additional field facilities for the Institute for its research and post-graduate training programmes in the animal, pasture, and crop sciences.

As part of the University of Adelaide the Institute is financed in large measure from the Commonwealth and State Government grants made on the recommendation of the Australian Universities Commission. But the research programmes at the Institute have also attracted a very satisfactory measure of support from other sources, notably primary industry bodies such as the Australian Wool Board, the Wheat Industry Research Council, Wheat Industry Research Committee of South Australia, Barley Improvement Trust Fund and the Australian Meat Research Committee. Between 20 and 25 per cent of the total Waite Institute budget comes from these sources.

The Institute contains the following six departments, each under the leadership of a professor, viz Agricultural Biochemistry and Soil Science, Agronomy, Animal Physiology, Entomology, Plant Pathology and Plant Physiology. For its first forty years the Institute centred its research and teaching activities on the plant and soil sciences but recognition of the growing importance of the livestock

industries in Australia led to the introduction of animal studies, a development entrenched by the establishment in 1964 of the Department of Animal Physiology.

The six departments are responsible for teaching the last two years of the four-year undergraduate course leading to the degree of Bachelor of Agricultural Science, the first two years being provided by appropriate science departments of the University. The Waite Institute is noted for the development and maintenance of a strong post-graduate school in which students from all over Australia and many countries overseas, particularly British Commonwealth countries, are enrolled.

### **The Elder Conservatorium of Music**

The University established a Chair of Music in 1884 and, enabled to do so by an endowment by Sir Thomas Elder, a Conservatorium of Music in 1898. In addition to full degree courses in practical studies, musicology, and composition, the University School of Music provides instruction in the various branches of musical performance for part-time students. Tuition in practical studies is given on an individual personal basis.

Concert experience for students is provided through regular informal concerts internal to the Conservatorium and by public concerts given from time to time. The University Music Society arranges each year a series of night concerts by members of the staff, who provide also a series of Sunday afternoon public concerts and recitals during the winter months.

In 1968 there were seventy-nine students proceeding to the degree of Bachelor of Music and 292 students taking single-subject practical studies.

### **Department of Adult Education**

This department offers, largely in conjunction with the Workers Educational Association of South Australia, a range of courses for members of the general public (see pages 180-1).

### **Other Special Features**

Unusual features of the University's work include its extensive research into the linguistics, myths, legends and musicology of the Aborigines, teaching and research in Computing Science ranging from second-year undergraduate level to the Doctorate of Philosophy, the Mawson Institute for Antarctic Research (which also takes post-graduate students), upper atmosphere research by balloon and rocket, mineral exploration, and arid zone studies.

## **THE FLINDERS UNIVERSITY OF SOUTH AUSTRALIA**

During 1958 when the University of Adelaide began to plan two major new buildings on its existing 30 acre site it became apparent that no further large buildings could be erected and that any further expansion would have to take place elsewhere.

Early in 1961 the South Australian Government indicated that it would make available to the University of Adelaide an area at Bedford Park, of some 370 acres, situated about seven miles from the centre of Adelaide in the foothills of the Mount Lofty Ranges. Consequently the University of Adelaide made a submission for financial support for Bedford Park to the Australian Universities Commission in 1962, which gave approval for the planning of Bedford Park. The institution became known as 'The University of Adelaide at Bedford Park'. Towards the end of 1965 the South Australian Government decided to make

The University of Adelaide at Bedford Park a fully autonomous university under the name 'The Flinders University of South Australia', after the great explorer and hydrographer, Matthew Flinders.

The Flinders University of South Australia Act came into force on 1 July 1966. The Act places the whole management of the University in the hands of a Council with powers to make statutes and regulations subject to the approval of the Governor-in-Council, and after 1971, of Convocation, which will comprise the graduates of the University and such other members as the Council may determine. The Council comprises twenty-seven members: The Chancellor; the Vice-Chancellor; the Director-General of Education; five members of Parliament elected by Parliament; a nominee each of the Chambers of Manufactures and Commerce jointly, the Trades and Labor Council, and the Government; two professors and two non-professorial academic staff members elected by the academic staff; the President of the Students Representative Council; eight members elected by Convocation; and up to three members co-opted by the Council.

Erection of the initial buildings commenced late in 1964 and was completed progressively over the period October 1965 to February 1966. These buildings were designed to cope with an enrolment of rather less than 1,000 students. A continuous building programme over the years 1967 to 1969 inclusive has increased the University's capacity to about 1,800 students. A hall of residence, which had been planned as one of the first buildings to be completed, has been delayed because approval for the necessary expenditure has not yet been given.

A more detailed history of the Flinders University was included on pages 163-8 of the *South Australian Year Book* 1967.

Details of revenue and expenditure for the period 1964-69 are shown in the following table.

**The Flinders University of South Australia, Revenue and Expenditure**

Particulars	1964	1965	1966	1967	1968	1969 (a)
	\$'000					
Capital revenue:						
Government Grants;						
State .....	555	1,755	559	943	785	469
Commonwealth .....	555	1,755	553	943	785	469
Other .....	16	4	73	—	—	—
Total .....	1,126	3,514	1,185	1,886	1,570	938
Current revenue:						
Government grants;						
State .....	208	382	753	1,245	1,452	1,644
Commonwealth .....	112	208	458	732	882	1,010
Fees .....	—	—	63	108	181	225
Other .....	—	—	1	12	31	26
Total .....	320	590	1,275	2,097	2,546	2,905
Capital expenditure .....	868	3,741	1,183	1,620	1,536	1,238
Current expenditure .....	322	590	1,278	2,074	2,509	2,962

(a) Estimated.

The first academic year of the University began on 7 March 1966, with enrolments of 382 first-year undergraduates and 35 graduate students. Details of enrolments for the years 1966 to 1969 are shown in the following tables.

**The Flinders University of South Australia, Enrolments**

Course	1966	1967	1968	1969 (a)
Bachelors degrees:				
Arts .....	177	379	546	698
Science (b) .....	204	320	406	458
Economics .....	—	46	92	105
Education .....	—	—	45	63
Higher degrees .....	26	62	95	138
Post-graduate diplomas:				
Social administration .....	9	15	17	30
Education .....	—	—	—	36
Miscellaneous .....	1	8	11	9
<b>Total .....</b>	<b>417</b>	<b>830</b>	<b>1,212</b>	<b>1,537</b>

(a) Preliminary.

(b) Includes the following numbers of students who intended to transfer to the University of Adelaide at the end of their first year : 1966, 70 ; 1967, 71 ; 1968, 75 ; 1969, 73.

**The Flinders University of South Australia, Enrolments, 1969<sup>(a)</sup>**

Course	New Students	All Students		
		Full-time	Part-time	Total
Arts .....	278	622	76	698
Science .....	215	451	7	458
Economics .....	36	89	16	105
Education .....	—	63	—	63
Higher degrees .....	62	76	62	138
Post-graduate diplomas .....	58	61	5	66
Miscellaneous .....	1	1	8	9
<b>Total .....</b>	<b>650</b>	<b>1,363</b>	<b>174</b>	<b>1,537</b>

(a) Preliminary.

**Academic Organisation**

The academic organisation of the University is based on 'Schools' instead of faculties or departments. The School is the basic academic and administrative unit and one of the professors of each school is appointed to act as the chairman of the school.

The advantages of this system include the creation of a small number of units, each containing a number of senior members of academic staff, the encouragement of inter-disciplinary work, and the covering of highly specialised or less usual subjects without the creation of separate departments for them. The schools are also physical entities and because students pursue courses mainly in one school it is hoped that this will induce a sense of 'belonging' which traditionally has been lacking in students taking courses in several different departments. At present there are four schools: the Schools of Language and Literature; Social Sciences; Physical Sciences; and Biological Sciences. The School of Biological Sciences is highly integrated. There are no divisions into the traditional disciplines of botany, zoology, micro-biology, etc.; the emphasis is on the manner in which the teaching and research are organised, *e.g.* cellular biology, molecular biology. The remaining schools have a total of nineteen disciplines established within them.

The establishment of full-time staff of the University at 1 January 1969 is shown in the following table.

**The Flinders University of South Australia,  
Full-time Staff Establishment, 1969**

<b>Schools:</b>	
Academic (teaching and research) . . . . .	141
Technical . . . . .	70
Clerical . . . . .	35
<b>Library:</b>	
Professional . . . . .	17
Other . . . . .	26
<b>Registry:</b>	
Senior administrative . . . . .	18
Clerical . . . . .	36
Caretaking, grounds and maintenance . . . . .	44
<b>Student services:</b>	
Professional . . . . .	3
Other . . . . .	3
<b>Total . . . . .</b>	<b>393</b>

### **The Library**

The acquisition of books for the library commenced in 1963 when the first library staff were appointed. By the time teaching began in 1966 a collection of some 60,000 volumes had been assembled. At the end of 1968 the collection totalled 121,713 volumes and approximately 20,000 volumes are being added each year; 3,796 periodicals are currently received. Emphasis is placed on the acquisition of material to support the current teaching and research programmes of the University, with special attention being paid to such fields as Spanish literature where little material is available elsewhere in Australia.

The first stage of the library building (50,000 sq ft of floor area) was occupied at the end of 1965 and the second stage (35,000 sq ft), which completed the building, was finished late in 1967. The book collections are mainly on open access shelves. Material requiring special conditions for storage and use is held in separate collections. Facilities are provided for the use of microfilms, tapes and records and for people wishing to use their own typewriters.

Loans to staff and students during 1968 totalled more than 50,000 and 2,865 items were borrowed from other libraries for use by staff and research students; 269 items were lent to other libraries during the year.

### **Admission to the University**

Students must have qualified for matriculation by passing the Matriculation Examination of the Public Examinations Board in a prescribed manner, and must be selected by the University. Flinders University and the University of Adelaide have established a Universities Admissions Office to which all students wishing to enter either University must apply for admission. Selection for admission is based, as far as practicable, on academic merit.

Annual fees for full-time students are \$288 for Arts, Economics and Education, \$348 for Science and \$144 for higher degrees. All full-time students also pay a union fee of \$45 a year for membership of the Union and for participation in its activities.

**Degrees Offered**

The University offers the following degrees; Bachelor of Arts, Bachelor of Economics, Bachelor of Education, Bachelor of Science, Master of Arts, Master of Economics, Master of Education, Master of Science, Doctor of Philosophy, Doctor of Letters and Doctor of Science. In addition there are post-graduate diplomas in social administration and in education.

The structure of the degree course in arts and science differs materially from those in most other Australian universities. The degree courses are built upon the principle of offering the students a choice of a limited number of 'programmes', rather than allowing students to aggregate credits for individual subjects. The programmes are designed so that a student will pursue the major part of his studies within one school.

**The Bedford Park Teachers College**

The Bedford Park Teachers College has been developed on a site of 20 acres adjoining the University site. As a result of early discussions between the University and the Education Department concerning the relationship of the College to the University, most of the students at the Teachers College are University students. In order to foster a close relationship between the work of the College and the University, a joint appointment has been made of Principal of the Bedford Park Teachers College and Professor of Education in the School of Social Sciences. Legislation to enable this arrangement was passed by the South Australian Parliament in 1965, and the Professor-Principal was appointed in 1966.

**The Horace Lamb Centre for Oceanographical Research**

In 1965, the University established an oceanographical research centre, which is now known as The Horace Lamb Centre for Oceanographical Research, after the distinguished mathematician who was Professor of Mathematics in the University of Adelaide from 1875 to 1885 and eminent for his work in hydrodynamics. The Centre provides undergraduate and graduate training in oceanography and its present interests are in physical, chemical and geological oceanography, and meteorology. Its investigations are related particularly to some of the problems of the Southern Ocean. The Centre has two field stations, one on the Coorong and the other at Cape du Couedic, Kangaroo Island.

**THE SOUTH AUSTRALIAN INSTITUTE OF TECHNOLOGY**

The South Australian Institute of Technology, which pioneered technical education in South Australia, was established in 1889 as the South Australian School of Mines and Industries. The School of Mines, as it became generally known, was set up under an Act of Parliament and rapidly grew in stature and reputation. In 1960, it was renamed the South Australian Institute of Technology.

From earliest times there had been co-operation between the University of Adelaide and the School of Mines, and in 1903 joint engineering courses were established. An important development in the history of technical education came in 1957 with an agreement between these institutions whereby certain courses of study at the School would lead to the degree of Bachelor of Technology at the University. Other degree courses have subsequently been introduced.

Although independent of the Education Department, the Institute maintains a close and harmonious relationship with the Department, and since 1959 there has been a progressive transfer of control of activities between the two. Classes

up to and including Matriculation level and some trade classes have been transferred to the control of the Education Department, as was the Adelaide Technical High School in September 1963. This has enabled the Institute to expand its work in the professional and semi-professional fields, including the assumption of control of the technical training centres at Whyalla and Port Pirie in 1962.

The Institute is administered by a council appointed by the Governor. The council has complete authority within the limits of the finance placed at its disposal and for which it is responsible annually to Parliament. The autonomy provided by this feature of control makes the Institute unique among Australian technical institutes.

In 1968 government aid represented 84 per cent of the Institute's receipts. Financial details for this and earlier years are given in the following table.

#### South Australian Institute of Technology, Revenue and Expenditure

Particulars	1964	1965	1966	1967	1968
	\$'000				
<b>Receipts :</b>					
Government aid .....	1,692	1,644	2,351	2,855	3,616
Student fees .....	314	442	489	564	639
Other .....	414	72	75	90	61
<b>Total .....</b>	<b>2,421</b>	<b>2,158</b>	<b>2,915</b>	<b>3,509</b>	<b>4,316</b>
<b>Expenditure :</b>					
Salaries .....	1,077	1,484	1,442	1,635	1,801
Other .....	1,016	698	1,170	1,373	2,316
<b>Total .....</b>	<b>2,093</b>	<b>2,182</b>	<b>2,612</b>	<b>3,008</b>	<b>4,117</b>

A wide range of courses and subjects to varying levels is offered; many courses lead to the award of a degree by the University or a diploma or certificate by the Institute. In 1968 the Institute offered thirteen degree courses including engineering courses leading to a degree in technology, courses in chemical technology, data processing and metallurgy for a degree in applied science, and a degree course in pharmacy.

Diploma and certificate courses applicable to local needs are conducted at the Whyalla division of the Institute and other courses are conducted at Port Pirie and Woomera.

#### South Australian Institute of Technology, Students and Staff

Particulars	1963	1964	1965	1966	1967	1968
<b>Students :</b>						
Individual enrolments	11,114	10,690	11,239	11,393	10,637	7,947
Subject enrolments	17,073	17,443	18,269	19,370	20,360	n.a.
<b>Teaching staff :</b>						
Full-time .....	170	139	162	157	166	194
Part-time .....	268	341	243	272	335	349

n.a.—Not available



In 1968 the Institute conducted about 790 classes. Of the 7,947 individuals enrolled in 1968, 3,013 were taking professional courses, and 3,474 certificate level courses. The remaining 1,460 students were not enrolled in full courses.

The majority of students attending the Institute do so on a part-time basis.

### TECHNICAL CORRESPONDENCE SCHOOL

The Technical Correspondence School provides correspondence courses in a wide range of subjects. Students may receive tuition in Public Examination Board subjects, certain university subjects, and in certain subjects analagous to those of the Institute of Technology. The school also provides trade school courses for apprentices, various accounting and commercial courses and a wide variety of specialist and leisure interest courses. Tuition for certain prisoners at Yatala and other gaols is conducted through the School.

In 1968 there were 6,766 persons, including 810 apprentices, enrolled with the Technical Correspondence School.

### ROSEWORTHY AGRICULTURAL COLLEGE

Roseworthy Agricultural College was opened to students in 1883 and thus ranks as the oldest of Australia's agricultural colleges.

It is situated 32 miles north of Adelaide in better class mallee country, the average annual rainfall being 17.1 inches. The total area of the College farm is 2,770 acres, including buildings, grounds, vineyards and orchard; 1,200 acres are cropped annually and about 400 acres fallowed.

Studs are conducted for cattle (Jersey and Poll Shorthorn), sheep (Merino and Poll Dorset), and pigs (Berkshire and Large White). The College is involved in research and experimental work applicable to the area and in the production of pure seed of wheat and oat varieties suitable for South Australia. A major wheat and oat breeding programme is also conducted.

The College issues diplomas known as the Roseworthy Diploma of Agriculture (R.D.A.), Roseworthy Diploma of Oenology (R.D.O.) and Roseworthy Diploma of Agricultural Technology (R.D.A.T.).

Students entering the R.D.A. course must be at least sixteen years of age on 1 January of the year of entry and have passed the Leaving examination in five subjects. Applicants for the R.D.O. course must have completed the first two years of the R.D.A. course or else have passed at Matriculation level in specified subjects, and spent one year gaining practical experience in a winery. R.D.A.T. applicants must have passed the R.D.O. at or above a prescribed level.

At 30 June 1968 there were 113 students in residence at the College.

### SOUTH AUSTRALIAN SCHOOL OF ART

The South Australian School of Art has the longest continuous history of any technical art school in Australia, having been established as a School of Design in 1861 under the control of the South Australian Society of Arts and transferred in 1909 to the Education Department as the South Australian School of Arts and Crafts. The present name was adopted in 1958. The School conducts full-time courses leading to the Diploma of Art in Fine Arts, Advertising Art and Art Teaching, while classes in related subjects are also provided for part-time students.

The Diploma in Art Teaching is a three year course, the art education section of which is provided at the School of Art. Other diploma courses are of four years with a study of specialised subjects following a common first-year course.

During 1968, 351 full-time diploma students and 630 part-time students enrolled at the School.

### TRADE EDUCATION

The Apprentices Act, 1950-1966 requires apprentices to attend schools or undertake correspondence courses for a minimum of three years of their indenture period.

The Education Department makes provision for the technical education of apprentices in technical colleges (of which there are five in the metropolitan area embracing ten separate institutions formerly known as trade schools, and four in the country at Port Pirie, Whyalla, Port Augusta and Mount Gambier), and by correspondence lessons through the Technical Correspondence School. Theoretical and practical instruction is given in a total of forty-six trades.

Although the Act requires apprentices to attend technical college to complete basic training (normally three years), facilities are provided for those showing ability to attend voluntarily for a fourth and fifth year. During these years, apprentices normally commence studies of an advanced nature most of which are components of various Post-Trade Certificate courses which the apprentices are encouraged to complete as adults. These advanced subjects, and others designed to meet special demands for training in new processes and techniques, are also available to adult tradesmen and others employed in industry.

Since 1960 the Commonwealth Development Bank has awarded Post-Apprenticeship Scholarships annually to financially assist young tradesmen and outstanding apprentices to further their education and technical qualifications. The scholarship scheme is administered on behalf of the Bank by the Australian Apprenticeship Advisory Committee. Twenty-two of these scholarships were awarded to South Australians for 1969.

Other aspects of apprenticeship are discussed on pages 295-7.

#### Trade Education, South Australia

##### *Number of Apprentices Enrolled in December*

Schools	1964	1965	1966	1967	1968
Metropolitan technical colleges ..	5,553	5,983	6,551	6,398	6,093
Country technical schools .....	619	672	723	753	802
Technical Correspondence School					
(a) .....	656	721	735	768	786
Total .....	6,828	7,376	8,009	7,919	7,681

(a) Includes Northern Territory apprentices.

### ADULT EDUCATION

#### Education Department: Adult Education

The Education Department provides adult education for part-time students in country areas through its eleven adult education centres (two of which are in the Northern Territory), the Whyalla Technical High School, and the Port Pirie,

Port Augusta and Mount Gambier Technical Colleges—with branch classes conducted in 178 towns. In the metropolitan area classes are held at twenty-eight technical high schools, all the technical colleges, the School of Art and the Adelaide Woodwork School. A full-time centre was established early in 1968 at Norwood where both day and evening classes are conducted. Adult education is also available through the Technical Correspondence School.

The 366 subjects currently available to adult classes include academic subjects up to Matriculation standard and beyond, technical subjects for apprentices and adult tradesmen, commercial and other vocational subjects, art and craft subjects, and a wide range of cultural activities.

**Education Department, Adult Education**  
*Number of Subject Enrolments*

Centres	1965	1966	1967	1968
Country .....	16,629	16,907	16,354	16,761
Metropolitan :				
South Australian School of Art .....	648	898	902	833
Technical colleges .....	2,707	3,577	3,723	4,010
Technical high schools .....	12,396	13,350	15,722	20,217
Technical Correspondence School ...	5,213	5,557	6,215	5,886
Adelaide Woodwork School .....	274	320	421	337
Total .....	37,867	40,609	43,337	48,044

**Workers Educational Association of South Australia**

The Workers Educational Association of South Australia (W.E.A.) was established in 1914. Patterned on the English W.E.A., it is a voluntary adult education organisation which works in close co-operation with the University of Adelaide's Department of Adult Education. Activities it organises directly, or in which it provides major assistance to other bodies, include a comprehensive day and evening class programme, postal courses for trade unionists, an international adult and childrens film festival and a short-period residential college.

It possesses a residential college at Goolwa, an adult education centre in the city, and a bookshop in the University grounds which provides books for University and W.E.A. students.

In 1968 there were 92 classes with a total enrolment of 4,683 students organised independently by the W.E.A., and a further 41 classes with an enrolment of 1,716 were organised by the W.E.A. in association with the University.

**University of Adelaide: Department of Adult Education**

Adult education classes were started by the University in 1917, and in 1957 a Department of Adult Education was established.

The Department, largely in association with the Workers Educational Association, provides tutorial classes and lecture classes in a wide range of subjects. A library is available to students of these classes. The Department also organises study circles, discussions and seminars in a number of subjects, and lectures, discussion groups, music recitals and art exhibitions are arranged in country centres. A summer school for adults is conducted annually.

In 1963 television was introduced as a medium for adult education.

Aggregate enrolments for 1968 were 1,269 in courses, schools and conferences (exclusive of one day schools, two day courses and single lectures) arranged independently by the Department, and 1,716 in classes arranged jointly with the W.E.A.

### Migrant Education

The Education Department on behalf of the Commonwealth Government conducts classes for migrants who have an inadequate command of the English language. These classes are held at many metropolitan and country centres including migrant reception centres. Tuition is also provided through correspondence courses and radio lessons.

A field officer visits individuals and families in their homes or places of employment to acquaint them with the opportunities for learning English, and to offer to enrol them in one of the classes.

In 1968, 3,322 persons enrolled or re-enrolled for English classes and a further 1,706 took correspondence lessons.

## TEACHER TRAINING

### Kindergarten

The Kindergarten Training College is under the control of the Kindergarten Union of South Australia (Inc.).

Trainees undertake a three-year course which includes lectures in a wide variety of subjects in addition to practical experience at kindergartens. Trainees may be granted training allowances by the Kindergarten Union (subject to a bond) or may enter as private students. Upon completion of the course trainees are awarded a diploma.

Trainees also benefit from the facilities of the Lady Gowrie Child Centre which is equipped for observational and experimental work with pre-school children, and is associated with the Kindergarten Union through the Australian Pre-School Association.

### Kindergarten Training College, South Australia

At 31 December	Lecturers		Student Teachers
	Full-time	Part-time	
1964.....	5	11	70
1965.....	5	7	77
1966.....	6	12	93
1967.....	6	11	92
1968.....	6	11	95

### Education Department

The Education Department conducts training schools for teachers at Adelaide Teachers College, Wattle Park Teachers College, Western Teachers College, Bedford Park Teachers College and Salisbury Teachers College. Courses are related to the various levels of education or to specialised fields. Infant and primary teachers are trained at Salisbury, Wattle Park, Western and Bedford Park Teachers Colleges. Specialist secondary teachers are trained at Western and Adelaide Teachers Colleges. General secondary trainees are attached to the Salisbury Teachers College, where they undertake only internal tertiary

studies, or to the Adelaide and Bedford Park Teachers Colleges which are situated adjacent to the University of Adelaide and the Flinders University of South Australia respectively.

The normal training period for infant and primary teachers is two years. Certain infant and primary teachers, after having completed their normal training, may attend special courses to equip them for teaching handicapped children. Courses for secondary teachers are usually of four years. In addition to the general secondary course there are also specialist courses for teachers of commercial subjects, agriculture, music, physical education, art, home science and crafts.

External facilities, as well as those of the colleges, are used in the training of teachers. Secondary trainees have the opportunity of completing a university degree, and infant and primary training may involve some study at a university. In addition, the facilities of the Institute of Technology, Roseworthy Agricultural College, Waite Institute, the Elder Conservatorium of Music and the South Australian School of Art are used in the training of specialist teachers. Trainees also attend at certain schools where they observe skilled teachers at work and where they gain practical experience through the preparation and presentation of lessons.

Trainees may enter the colleges as private students; the majority, however, receive free tuition and allowances while training in return for a three year bond with the Education Department. To assist intending trainees in attaining the necessary entrance qualifications the Department offers teaching scholarships.

**Students at Government Teachers Colleges<sup>(a)</sup>, South Australia**

Classification	1964	1965	1966	1967	1968
Infant .....	343	351	388	414	406
Primary .....	1,141	1,142	1,150	1,214	1,116
Secondary :					
General (b) .....	997	1,070	1,232	1,269	1,266
Specialist (c) .....	587	600	676	692	725
Total .....	3,068	3,163	3,446	3,589	3,513

(a) Number of students attending for whole or part of the year.

(b) Includes agriculture and music teachers.

(c) Includes commercial, physical education, craft and art teachers.

### Private Schools

In the Catholic school system only one religious order, the Sisters of Mercy, receives its training in South Australia. These Sisters attend the Education Department training colleges, the University of Adelaide, and The Flinders University of South Australia. Other teaching personnel receive their training interstate.

Other private schools do not normally train their own teachers but employ persons considered to be suitably qualified.

### STATE EXPENDITURE ON EDUCATION

Details of expenditure by the State Government on education in recent years are given below. The considerable increase in annual expenditure shown in the table has been a continuous process since the end of the 1939-45 War. In

1946-47 Government expenditure from revenue on education was \$4 million with a further \$112,000 of loan funds devoted to the construction and maintenance of schools.

### State Expenditure on Education, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
<b>Expenditure from Consolidated Revenue:</b>					
Primary .....	16,562	18,006	19,539	22,279	23,678
Secondary .....	8,691	9,530	10,573	11,843	13,004
Technical (a) .....	7,357	8,401	10,010	11,006	12,446
Kindergarten Union grants ..	390	427	455	499	542
University grants .....	7,077	9,254	11,030	8,628	9,965
Waite Agricultural Research Institute .....	824	1,040	1,080	1,064	1,162
Roseworthy Agricultural College .....	271	291	300	322	347
Pensions .....	773	852	918	1,038	1,141
Payroll tax .....	669	737	818	922	1,012
Miscellaneous .....	381	410	329	347	425
<b>Buildings;</b>					
Schools (a) .....	2,379	2,197	2,409	2,434	2,481
Agricultural College .....	52	21	12	15	37
Sinking fund payment .....	1,026	1,167	1,328	1,489	1,700
Interest on loan expenditure	3,404	3,930	4,515	5,047	5,572
<b>Total expenditure from Consolidated Revenue ..</b>	<b>49,856</b>	<b>56,264</b>	<b>63,316</b>	<b>66,931</b>	<b>73,513</b>
<b>Receipts:</b>					
Education Department .....	820	963	975	1,096	1,304
Agricultural College .....	105	103	101	99	107
Miscellaneous .....	18	37	56	65	65
Commonwealth grants (b) ...	3,651	5,080	6,240	4,418	5,221
<b>Total receipts .....</b>	<b>4,594</b>	<b>6,184</b>	<b>7,371</b>	<b>5,679</b>	<b>6,697</b>
<b>Net expenditure from Consolidated Revenue ..</b>	<b>45,260</b>	<b>50,080</b>	<b>55,945</b>	<b>61,253</b>	<b>66,816</b>
<b>Loan Expenditure:</b>					
<b>Buildings;</b>					
Schools, etc. ....	9,867	11,270	11,781	10,764	8,711
Agricultural College .....	77	45	74	13	36
Universities and Advanced Education .....	—	—	—	3,800	4,668
School buses .....	268	279	281	283	269
Student hostel advances (including buildings) .....	346	254	222	31	100
<b>Total .....</b>	<b>10,558</b>	<b>11,847</b>	<b>12,358</b>	<b>14,891</b>	<b>13,784</b>
<b>Less repayments and redemptions</b>	<b>1,081</b>	<b>1,296</b>	<b>1,418</b>	<b>3,514</b>	<b>4,343</b>
<b>Net debit to loan accounts ..</b>	<b>9,477</b>	<b>10,551</b>	<b>10,940</b>	<b>11,376</b>	<b>9,441</b>

(a) Includes technical high schools and Institute of Technology.

(b) To and including 1965-66, for University purposes only. Thereafter includes grants for Colleges of Advanced Education (\$554,000 in 1967-68).

### 6.3 SCIENTIFIC AND RESEARCH ORGANISATIONS

#### WEAPONS RESEARCH ESTABLISHMENT

The Weapons Research Establishment is one of three defence research and development establishments within the Research and Development Division of the Department of Supply—the others being the Aeronautical Research Laboratories and the Defence Standard Laboratories both in Victoria. The Headquarters and main laboratories of Weapons Research Establishment are situated at Salisbury, fifteen miles north of Adelaide, and the associated testing range at Woomera, approximately 300 miles north-west of Adelaide.

#### Early History

Soon after the end of the 1939-45 War, the latter stages of which saw the use of rocket-propelled weapons, the United Kingdom commenced a programme of research and development in the field of guided weapons requiring a large unpopulated area where an instrumented guided weapons testing range could be established. Investigations indicated that such an area existed in Central Australia and in 1946 the United Kingdom Government approached Australia with proposals to set up a guided weapons testing range. Discussions between the two Governments led to a decision to establish in Australia facilities for research and development on guided weapons including a testing range with all necessary instrumentation and assessment facilities.

This agreement, the Joint United Kingdom/Australia Project, commonly referred to as the Joint Project, had as its object to set up and operate, as a joint United Kingdom/Australia undertaking an experimental range and supporting establishment for the testing and development of guided weapons, pilotless aircraft and air launched equipment, including radio and radar control and counter measures, and such other agreed projects as could be carried out making use of facilities then in existence or planned. Australia was to be responsible for the range and associated facilities, developmental facilities and production capacity.

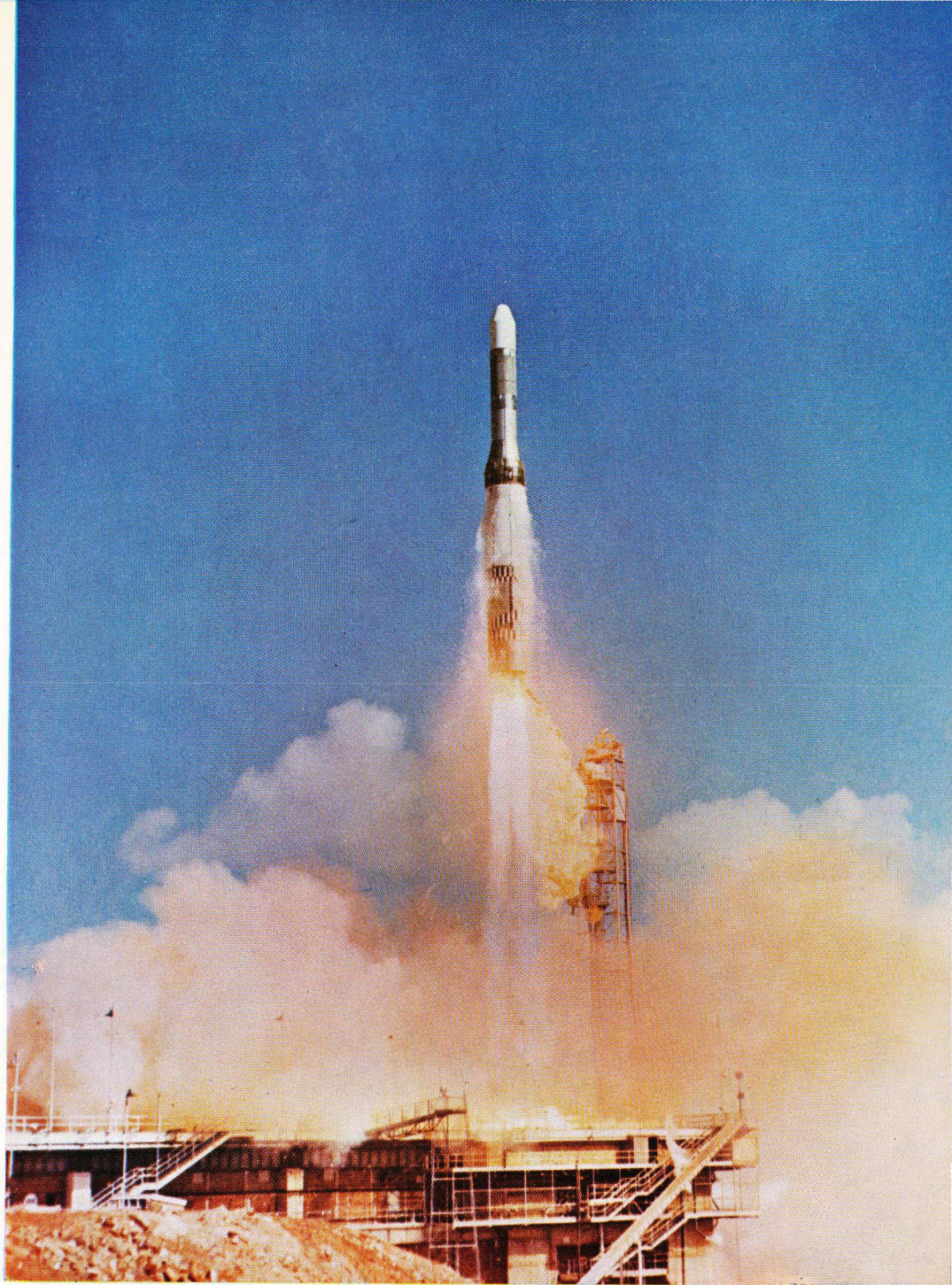
At Salisbury there existed a very large former war-time munitions factory which could be used as a headquarters and supporting laboratories and in 1947 the Long Range Weapons Establishment began operations at Salisbury with the object of building a Range, starting from Woomera and extending some 1,250 miles to the north-west over practically uninhabited country.

Scientific staff were engaged for the Establishment, and from this grew the concept of an Australian Defence Scientific Service consisting of personnel of the Long Range Weapons Establishment, the Munitions Supply Laboratories (renamed the Defence Standard Laboratories) and the Division of Aeronautics of the Council for Scientific and Industrial Research which was transferred to the Department of Supply and renamed the Aeronautical Research Laboratories.

In 1949, it was decided to supplement the L.R.W.E. laboratories at Salisbury with others to provide a broader background for the work on guided weapons and to cover other aspects of defence science. Some activities of the Aeronautical Research Laboratories were transferred to Salisbury to create the High Speed Aerodynamics Laboratory, while a Propulsion Research Laboratory for research on rocket motors used in guided weapons and an Electronics Research Laboratory were also established.

As these various laboratories have developed and the requirements for trials at the Woomera Ranges have become more specific, the organisation has, from time to time, been modified to provide improvements in the administration and

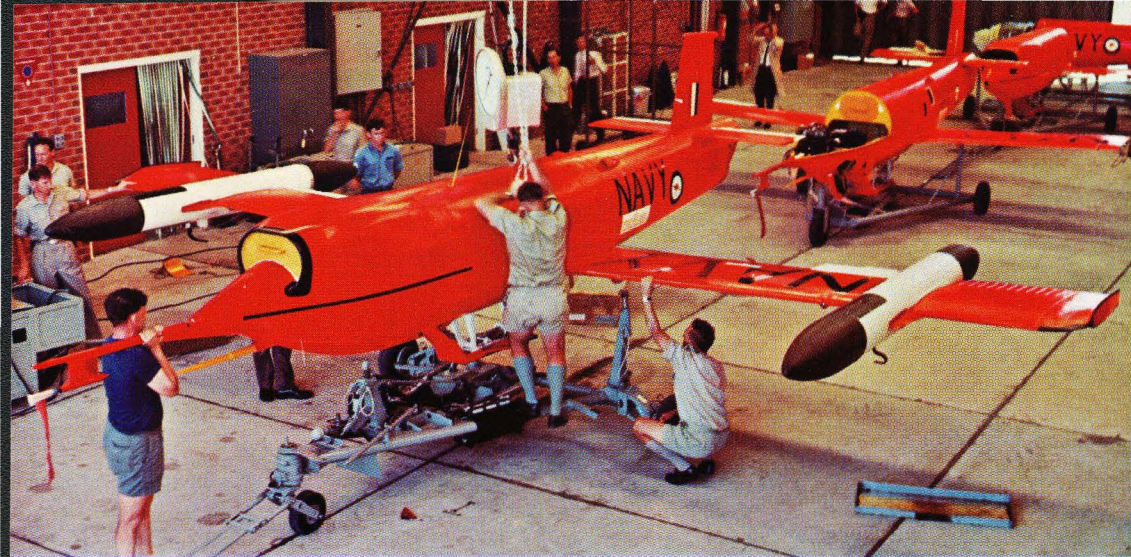




*Weapons Research Establishment*

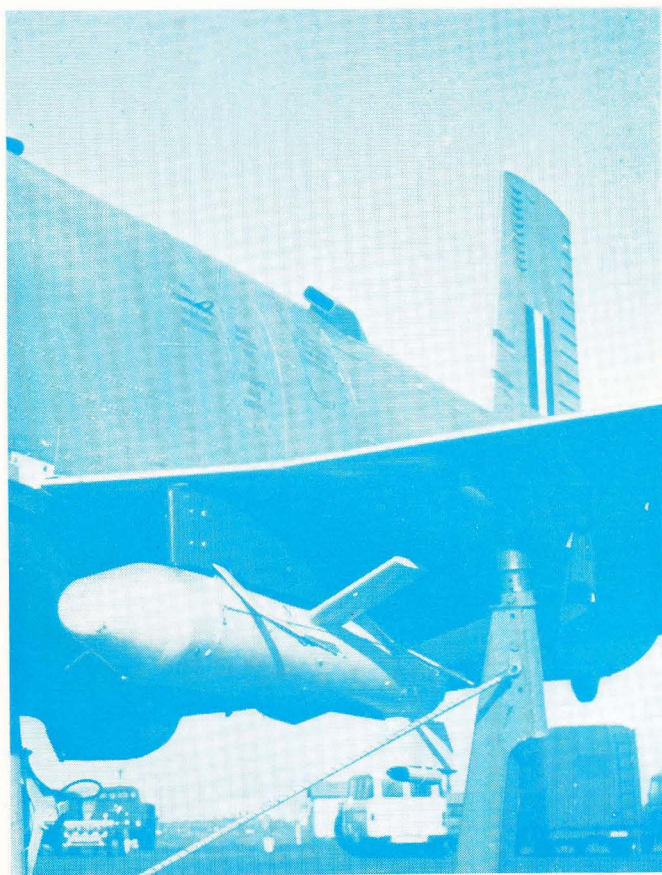
A European Launcher Development Organization (ELDO) Europa I rocket launch from Woomera.





*Department of Supply*

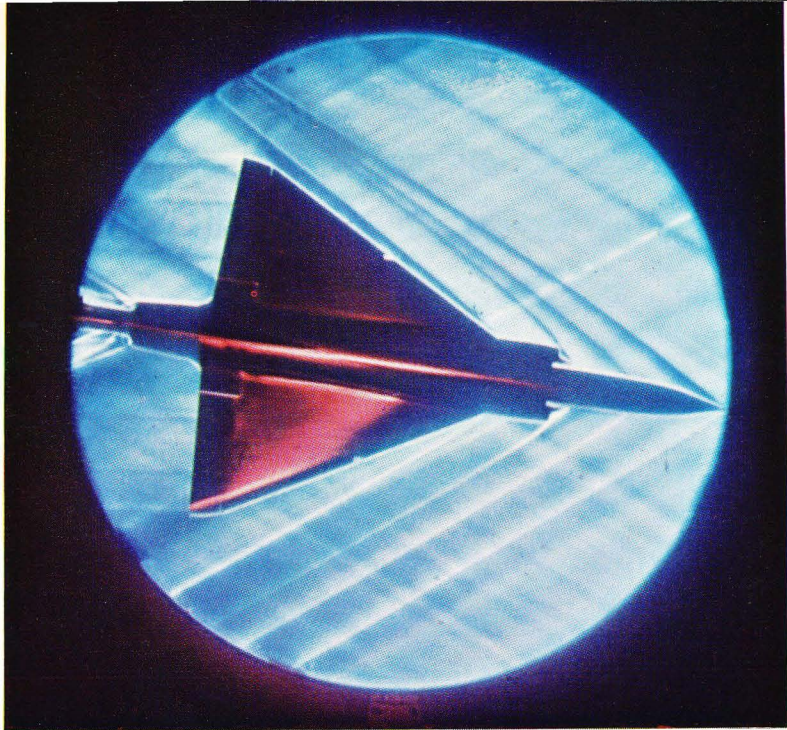
*Jindivik* pilotless target aircraft similar to those used at Woomera.



*Weapons Research Establishment*

A *Tonic* towed target fitted to a *Jindivik*. These towed targets are carried in pairs and may be streamed, separately or together, on tow lines of length up to 500ft from a radio-controlled winch inside the fuselage.



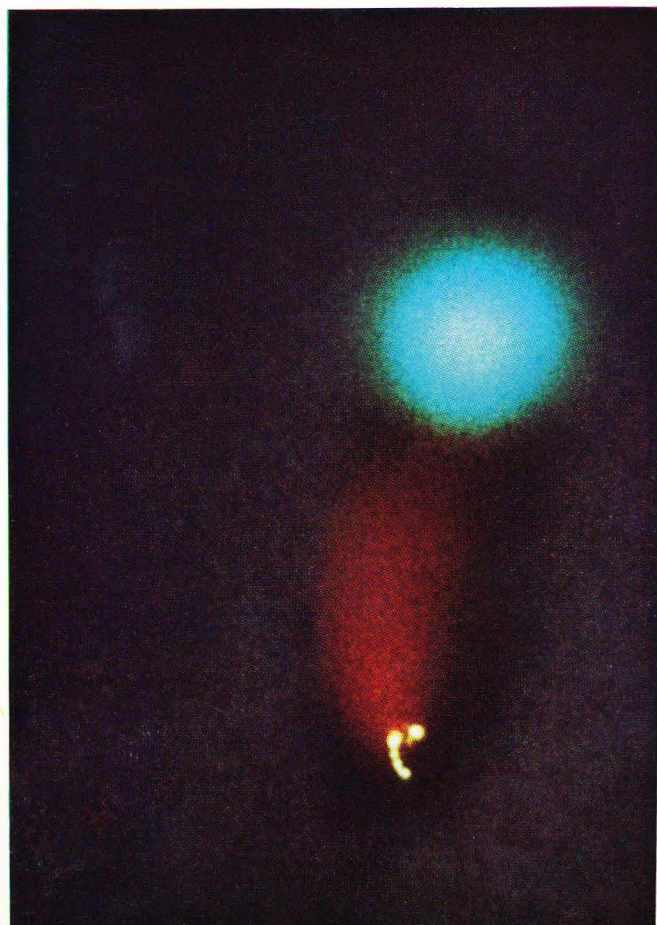


*Weapons Research Establishment*

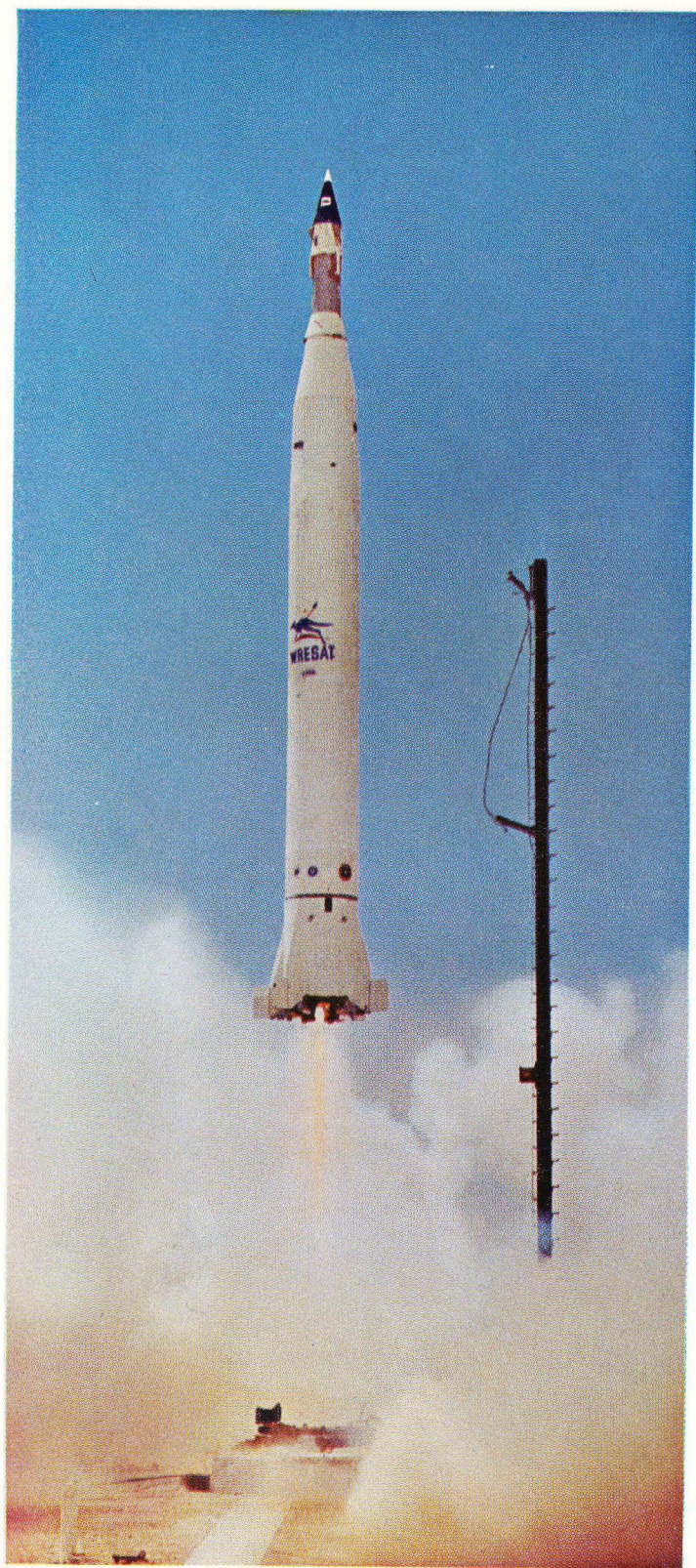
Shock-wave pattern of *Mirage III O* model in the supersonic-wind tunnel at Salisbury.

*Weapons Research Establishment*

Glow-clouds from chemical seeding of the upper atmosphere at altitudes approaching 100 miles enable wind speed and direction to be computed.







*Weapons Research Establishment*  
The first Australian satellite, WRESAT, launched from Woomera  
on 29 November 1967.

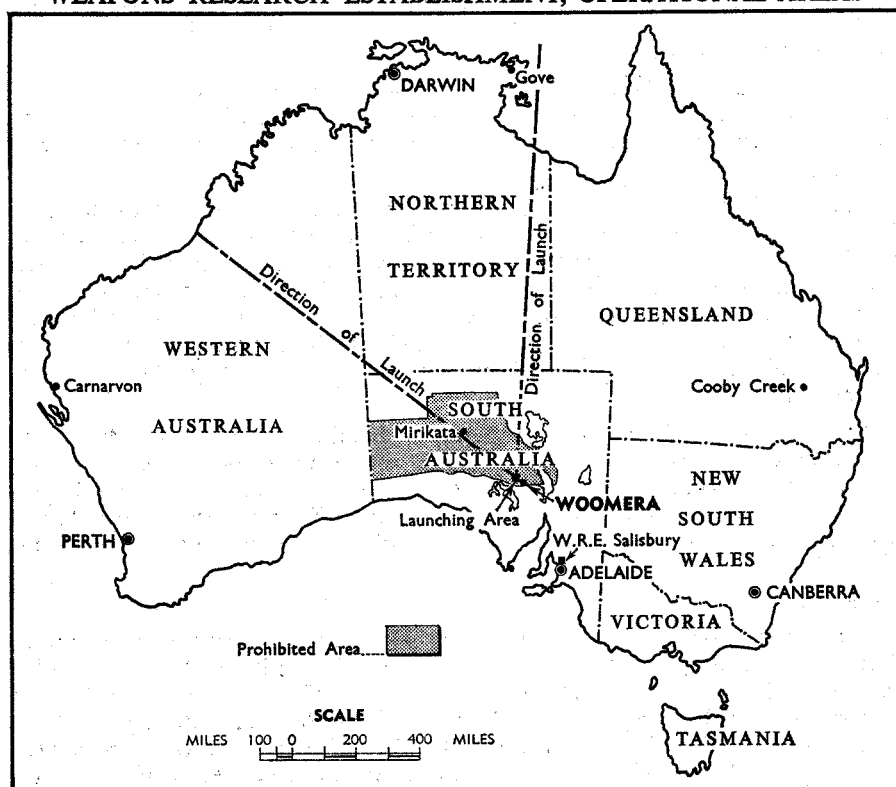
direction of work. In 1955 all the establishments and laboratories at Salisbury were amalgamated into one organisation, called the Weapons Research Establishment.

The Weapons Research Establishment is headed by a Director who is located at Salisbury and is responsible for the operations of the Establishment, at Salisbury, Woomera and other sites in Australia.

#### Salisbury Research Laboratories and Headquarters

The Establishment at Salisbury occupies approximately 1,200 buildings and covers an area of some  $4\frac{1}{2}$  square miles. In the initial stages communication by air with Woomera was conducted from the Royal Australian Air Force (R.A.A.F.) Station at Mallala, some 25 miles north of Salisbury, but as the need arose for larger and faster aircraft, it was decided to construct Edinburgh Airfield at Salisbury to provide the air support for trials and the air-lifting of freight and passengers to Woomera. The Airfield was operated on behalf of the Establishment by the R.A.A.F., which also maintained and flew the aircraft required for trials and other activities. In recent years the need for this facility has decreased, and Edinburgh has now been transferred to the R.A.A.F. and has become an operational R.A.A.F. base. Under agreement with Department of Air, aircraft associated with Joint Project trials are still stationed, maintained and operated from this base by the R.A.A.F.

### AUSTRALIA WEAPONS RESEARCH ESTABLISHMENT, OPERATIONAL AREAS



MAP 10

Extensive facilities have been provided at Salisbury for use by branches of British firms which have contracted with the British Ministry of Technology to develop weapon systems and/or components, and which require premises from which they can operate during the conduct of their trials of weapons in Australia.

A detachment of the British Defence Research Supply Staff is located at Salisbury for liaison with the Establishment on matters concerning the Joint Project and with the British contractors on the area.

W.R.E. has established extensive workshops at Salisbury, and since 1953, has had its own Apprentice Training School, where about 450 apprentices have been trained and some 200 are currently in training. The School has twenty-six instructors and conducts training in ten trades.

### **Woomera Village**

The Trials Ranges operated by the Establishment are based on Woomera, a town built exclusively for this purpose in virgin country five miles from Pimba on the Trans-Australian Railway and some 300 miles north-west of Adelaide. It is now a compact town of about 5,000 inhabitants which is administered by the Establishment as a domestic base for the Range and other operational areas spread over some hundreds of miles. The country is semi-desert with a mean annual rainfall in the vicinity of 7 inches, and sheep are grazed on the pastoral leases within the proclaimed area.

The town is an example of modern town planning in which traffic avenues skirt the residential streets. All normal services such as water, electricity and sewerage are provided.

A good standard of houses and blocks of flats have been built in brick, timber-frame and pre-fabricated materials. In general, married staff occupy houses and flats and single staff are housed in quarters surrounding the several mess buildings.

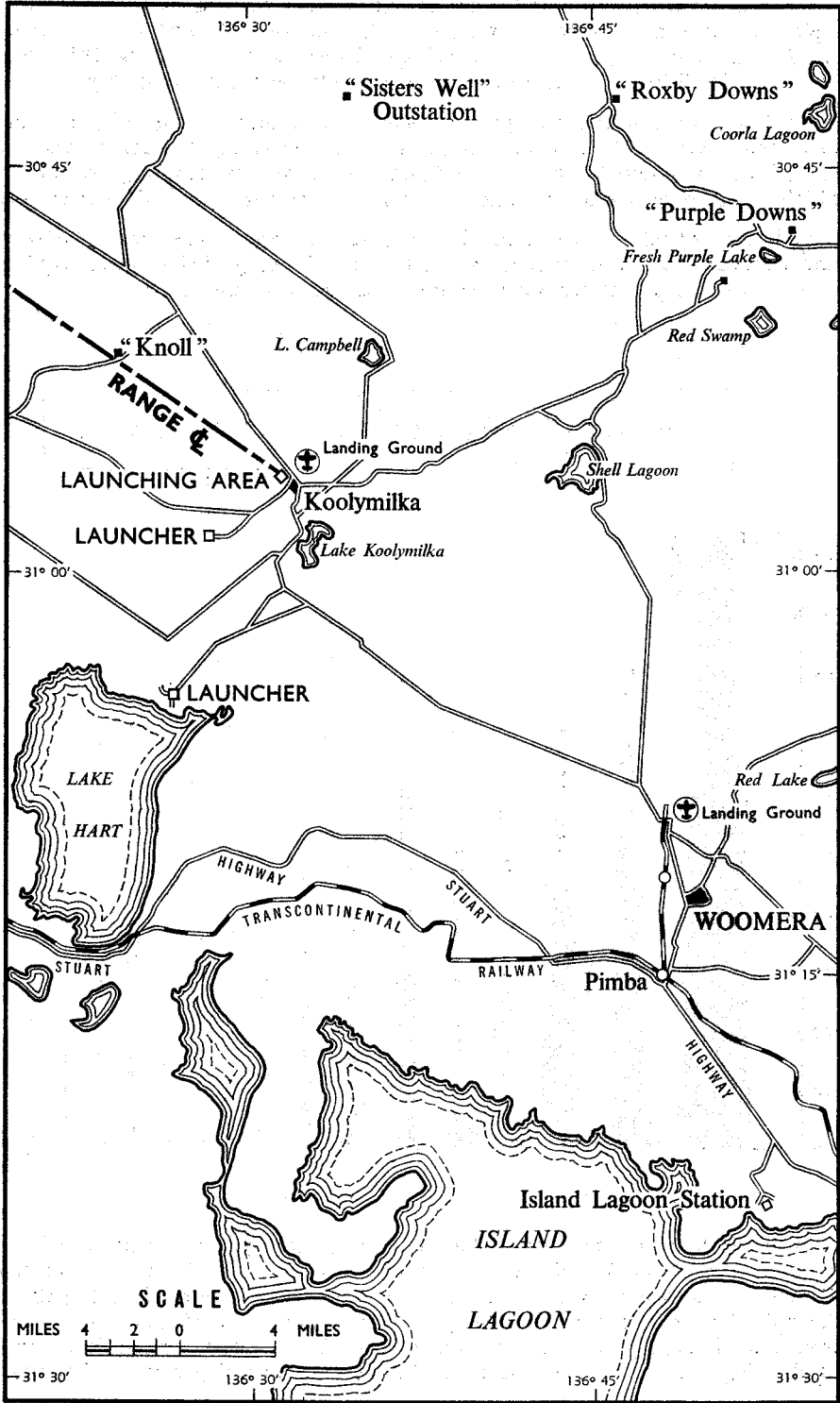
Public buildings include a large shopping centre, modern theatre, three churches, kindergarten, infant, primary and high schools, police and fire stations, hospital, post office, youth centre and a number of halls. Amenities for sport and recreation include swimming pools, basket-ball, tennis and squash courts, bowling green, golf course, cricket and football fields. There is an Arboretum with an adjacent park and a small sound-shell. In its provision for recreational and cultural activities, Woomera is probably superior to other towns of comparable size.

The town is administered by an Area Administrator with the advice and assistance of the Woomera Board which is composed of elected residents, Departmental appointees and a permanent Secretary. Until 1968 the Administrator (then called Superintendent) was a senior officer of one of the Armed Services, but the post has been filled by a civilian from the beginning of 1969.

### **Trials Ranges**

A number of independent Ranges have been used at Woomera from time to time for special purposes, but the principal missile Range is based at Koolymilka, approximately twenty-five miles to the north-west of the town. It includes a number of launching aprons spread over a large frontage allowing work to proceed on several projects simultaneously. An elaborate network of instrumentation which falls broadly into optical and electronic categories covers the trials area.

# WOOMERA RANGES



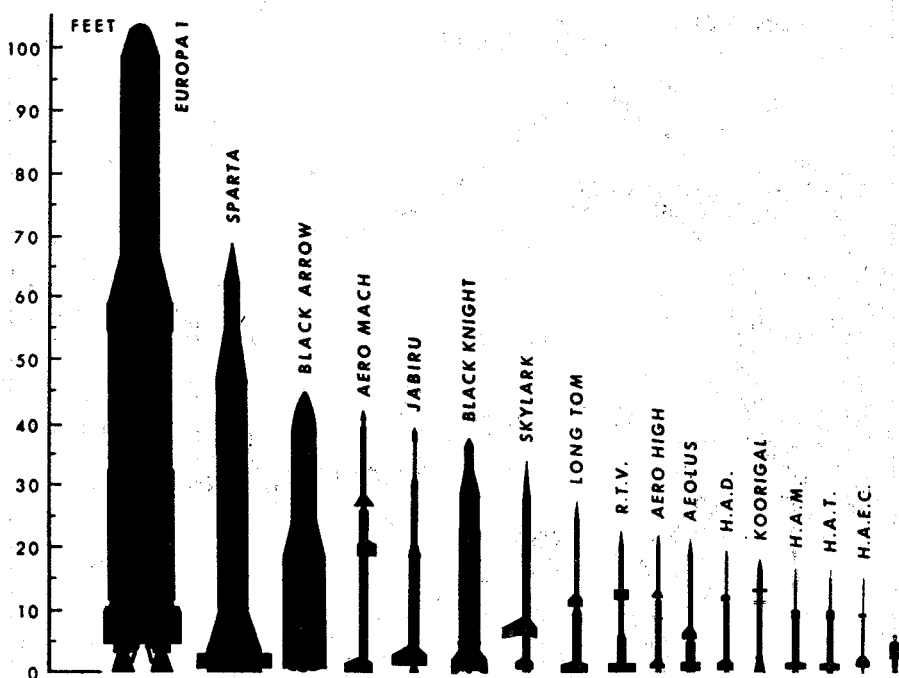
MAP 11

Optical systems have a particular advantage at Woomera as the climate is typified by long periods of fine weather with good visibility and freedom from cloud. The systems in use include high-speed cameras to record the behaviour of rounds in flight and networks of kinetheodolites and ballistic cameras.

Electronic instrumentation systems include multi-channel telemetry systems to record internal behaviour of vehicles and missiles in flight, tracking systems using pulse and doppler radar techniques and a Missile Tracking System in which an airborne beacon is tracked by a ground system of auto-follow aerials.

Both the optical and electronic instrumentation systems are subject to continual research and development so that they can be up-graded to meet requirement as more sophisticated weapons are developed and tested.

### RESEARCH VEHICLES LAUNCHED AT WOOMERA



In order to meet the requirement of targets for guided weapon trials, a high-speed pilotless jet aircraft has been developed. This aircraft named *Jindivik*, an aboriginal word meaning 'the hunted one', designed and built in Australia by the Department of Supply's Government Aircraft Factory, is controlled by radio signals from the ground and in its latest version is capable of climbing to a height in excess of 65,000 feet and operating close to the speed



of sound. It takes off from a recoverable tricycle trolley from which it is released automatically when flying speed is reached, and is landed on a retractable skid. A variety of special weapon-assessment equipment, including cameras which film the approach of a missile can be fitted. Other devices can be fitted to simulate aircraft of much larger size.

Apart from its use at Woomera where it has proved to be extremely reliable, one aircraft having flown more than 100 sorties, the *Jindivik* has been supplied to Great Britain, U.S.A. and Sweden.

Obsolete English Electric *Canberra* and Gloster *Meteor* jet aircraft suitably modified for pilotless flight have also been used as targets for weapon trials. To conserve aircraft, several towed targets have been developed. These are carried stowed by the pilotless aircraft and streamed when the aircraft has been flown to the required position for engagement.

### Missiles and Research Vehicles

Since the inception of the Establishment many types of missiles and research vehicles have been fired from the Woomera Ranges. These include:

#### *Air to Air Weapons*

Fire Flash  
Fire Streak  
Red Top  
Matra R530

#### *Surface to Air Weapons*

Bloodhound  
Thunderbird  
Seaslug  
Sea Dart  
Rapier

#### *Air to Ground Weapons*

Blue Steel

#### *Anti-Tank Weapons*

Mulkara  
Swingfire

#### *Anti-Submarine Weapons*

Ikara

#### *Bombs*

25 lb to 10,000 lb

#### *Research Vehicles*

Europa I  
Sparta  
Wresat  
Black Knight  
Skylark  
Aero High  
Jabiru  
Long Tom  
Kookaburra Met  
Skua

#### *Upper Atmosphere Research*

##### *Rockets*

High Altitude Density (HAD)  
High Altitude Temperature  
(HAT)  
High Altitude Measurement  
(HAM)  
High Altitude Experiment Carrier  
(HAEC)

Of the weapons listed above, special note should be taken of the *Ikara* Anti-Submarine Weapon System. This is wholly Australian designed and manufactured, is currently the main anti-submarine weapon in use by the Royal Australian Navy and has also been adopted by the Royal Navy. In the development phase of this highly successful weapon, Weapons Research Establishment, Salisbury, was responsible for the design and development of the solid propellant rocket motor and the complete guidance system; in addition some firing trials were carried out on the Woomera Range.

### Upper Atmosphere Research

Apart from its Military programme, the Establishment has a long and continuous interest in upper atmosphere and near space research work, resulting from the availability of Woomera for the firing of sounding rockets. A number of rockets such as *Long Tom*, *HAM*, *HAD*, *HAT*, *HAEC* and *Aero High* have



been designed and built by the Establishment. The latter generations of these rockets are being fired from Woomera in a steady programme, to obtain further knowledge of the earth's atmosphere in the region above the height covered by meteorological balloons and below that covered by satellites.

A larger and more ambitious programme of upper atmosphere research has been based on the British designed *Skylark* rocket. *Skylark* can carry sizeable payloads to a height of 150 miles, and since the inception of this programme 171 have been fired from Woomera. Management of the experimental programme is vested in the Space Research Management Unit of the United Kingdom Science Research Council and the experiments forming the payload are designed by various British research institutions. In addition, experiments designed by Weapons Research Establishment and some Australian Universities have been carried in this rocket.

#### **Australian Satellite**

The Sparta programme, a joint U.K./U.S.A./Australian project to study physical phenomena of bodies re-entering the earth's atmosphere, made use of multi-stage rockets with the American *Redstone* booster as the first stage. Whilst this programme was in progress, the U.S. Department of Defense agreed to make one of these vehicles available to Australia for the purpose of launching a satellite. The objectives were to extend the range of scientific data relating to the upper atmosphere, assist the U.S.A. in obtaining physical data of relevance to its research programme, develop techniques pertinent to launching trials in the ELDO and British satellite programmes and demonstrate an Australian capability for developing a satellite using advanced technology and existing low cost launch facilities at Woomera.

As the firing of this vehicle had to take place immediately at the completion of the Sparta programme, a period of less than twelve months was available in which to design and build the satellite (known as WRESAT) as well as the experiments which it was to carry. Work was commenced in the Salisbury Laboratories and at the University of Adelaide and was completed in time to enable a successful launching to take place on 29 November 1967. The satellite remained in orbit for forty-two days and during that time completed 642 orbits. Scientific information was transmitted for five days in which time 73 orbits were completed. This information was collected on magnetic tape by the global tracking network of the National Aeronautics and Space Administration of the U.S.A. and other observers throughout the world and has been passed to W.R.E. for analysis.

The designing, building, testing and launching of a satellite and its experimental equipment in the space of some eleven months, and its successful launching at the first attempt are notable achievements.

#### **U.S.A.-Australian Projects**

The United States of America, during its preparations for the 1957-58 International Geophysical year, requested and was granted approval from the Australian Government to install satellite tracking facilities at Woomera. Subsequently the two Governments agreed to the establishment of a comprehensive network of tracking stations in Australia to support the United States space programmes. Stations were established at Woomera, Muchea and Carnarvon in Western Australia, Cooby Creek in Queensland, and Tidbinbilla, Orroral Valley and Honeysuckle Creek near Canberra in the Australian Capital Territory. Muchea, used for the Mercury Manned Space Project was closed following completion of the project and the activities of this station were transferred to the Carnarvon

Station for subsequent projects. Under the agreement, the United States provides tracking and other equipment, while the stations are built, operated and maintained by Australian staff. Until 20 January 1969, the operation of these stations was the responsibility of the Weapons Research Establishment; in most cases the Station Director and some assistants were W.R.E. officers while the station operational staffs were provided by contracting firms. This task has now passed to Central Office of the Department of Supply in Canberra.

#### European Launcher Development Organisation

Australia is a member of the European Launcher Development Organisation (ELDO) which has as its objective the development of a satellite launch vehicle and associated technology. Member states are the United Kingdom, France, Federal Republic of Germany, Italy, Belgium, Netherlands and Australia. Under the terms of the agreement covering the project, Australia, through Weapons Research Establishment, is responsible for the provision of launching and support facilities.

The launching emplacement originally built for the testing of *Blue Streak* as an ICBM is a massive concrete structure jutting out over an escarpment 150 feet above the surface of Lake Hart, a generally dry salt-encrusted lake. On top of this structure is a 130 foot high Servicing Tower weighing 620 tons, which encloses the rocket assembly during the preparation stages and which is rolled back to the far end of the causeway before launch. Beneath the deck of the causeway are a number of Test Posts together with reticulation systems for kerosene, liquid oxygen, high pressure nitrogen gas, water and a number of other missile and launcher services. An elaborate control post and missile assembly building, some miles from the launching pad, have also been provided. A plant capable of producing 100 tons of liquid oxygen per week was constructed at Woomera in support of *Blue Streak*. So far nine vehicles have been launched in the ELDO programme, the latest (F8), on 3 July 1969. This is to be followed later in 1969 with one more vehicle which will attempt to insert an instrumented satellite into polar orbit.

#### Other Research Projects

A third satellite launching project at Woomera is *Black Arrow*, a British three-stage launcher based on the successful *Black Knight* research rocket. The first experimental *Black Arrow* vehicle was fired in June 1969 and after further experimental firings it is planned to make satellite launchings into polar orbit.

W.R.E. is also working on many other research projects not directly connected with the Range, including lasers and Project Mallard.

The laser is a powerful and modern research tool and has applications to a wide range of activities, one being the accurate tracking of reflecting objects, for example, at a missile range. Work on the laser commenced at W.R.E. in 1961 and its applications have been studied, not only to tracking, but in other fields of defence such as communications. The first laser to operate in Australia was at W.R.E.

One outcome of these studies has been of value not only to defence but to Australia's national development. By using the laser to measure the vertical distance between an aircraft and the ground, the ground profile can be recorded more accurately than by other methods. This is of great value in surveying difficult country and one such device, known as a laser terrain profiler, is being developed and manufactured by W.R.E. for the Department of National Development.

An important new activity under the general military aegis in which Weapons Research Establishment has been involved over the past year is a contribution to the Mallard Project. This project has for its objective the provision of modern communication equipment for tactical warfare purposes in the 1970s. It is international in scope, involving the co-operative efforts of the United States, the United Kingdom, Canada and Australia. The Mallard system represents the largest and most involved project for tactical communication purposes seen to date.

In Australia the Army Design Establishment is the designated design authority for four Mallard technique studies, and because of its considerable experience in communications, defence electronics and digital techniques, the Weapons Research Establishment was chosen to carry out two of these.

#### Staff

At the end of 1968 the total number of staff employed by the Establishment at both Salisbury and Woomera was as follows:

Professional Staff (Scientists and Engineers) . . . . .	533
Technical/Drafting Staff . . . . .	1,023
Administrative and Clerical Staff . . . . .	835
Industrial Employees . . . . .	2,106
<b>Total . . . . .</b>	<b>4,497</b>

Of this total 1,001 were stationed at Woomera.

As the biggest Research and Development Establishment in Australia, and a large employer of labour, W.R.E. has become an important element in the economy of South Australia.

### THE COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION

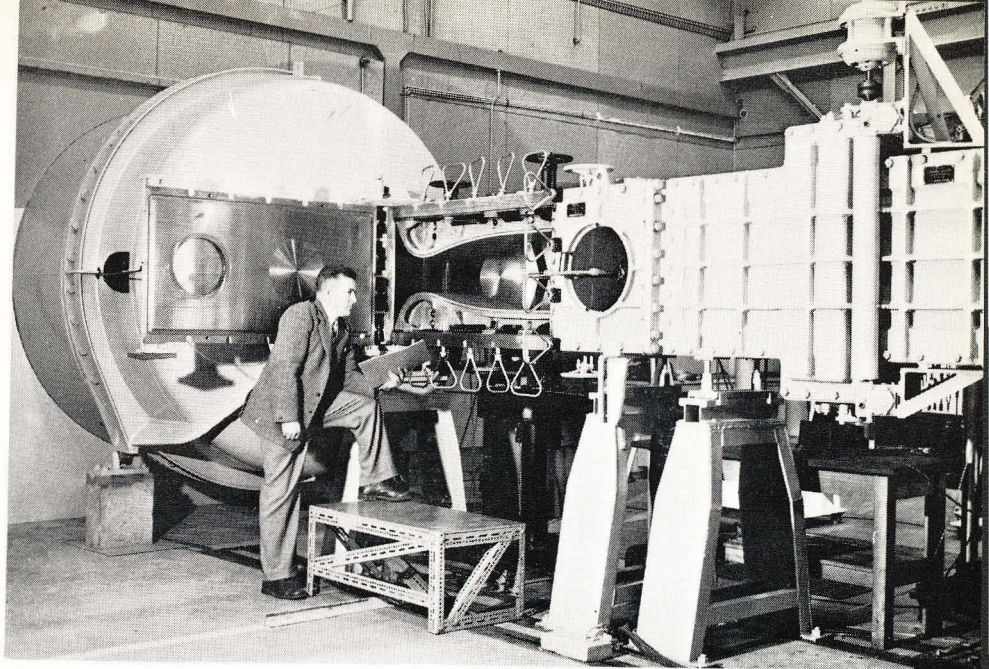
The Commonwealth Scientific and Industrial Research Organisation (C.S.I.R.O.) is a corporate body established by Act of Parliament. Its first responsibility is to carry out 'scientific research and investigations in connection with, or for the promotion of primary or secondary industries in the Commonwealth . . .'. The governing body is an executive of five full-time and four part-time members.

The executive is supported by a national advisory council and by a State committee in each State. These advisory bodies are composed of scientists, agriculturalists and industrialists. Council and committee members are frequently consulted, either individually or corporately, by the executive. They also take the initiative in bringing problems to the attention of the executive.

Four of the thirty-five C.S.I.R.O. research divisions have their headquarters in South Australia: these are the Divisions of Nutritional Biochemistry; Soils; Horticultural Research; and Mathematical Statistics.

#### Division of Nutritional Biochemistry

This Division's interests extend through the fields of nutritional biochemistry and nutritional physiology. The greater part of its efforts have been concentrated on research associated with sheep nutrition and wool and meat production. The Division's work on the role of trace elements in plant and animal nutrition has been of far-reaching consequence. The animal nutrition work has led to practical means of controlling 'coast disease' and 'phalaris staggers', two common diseases



*Weapons Research Establishment*

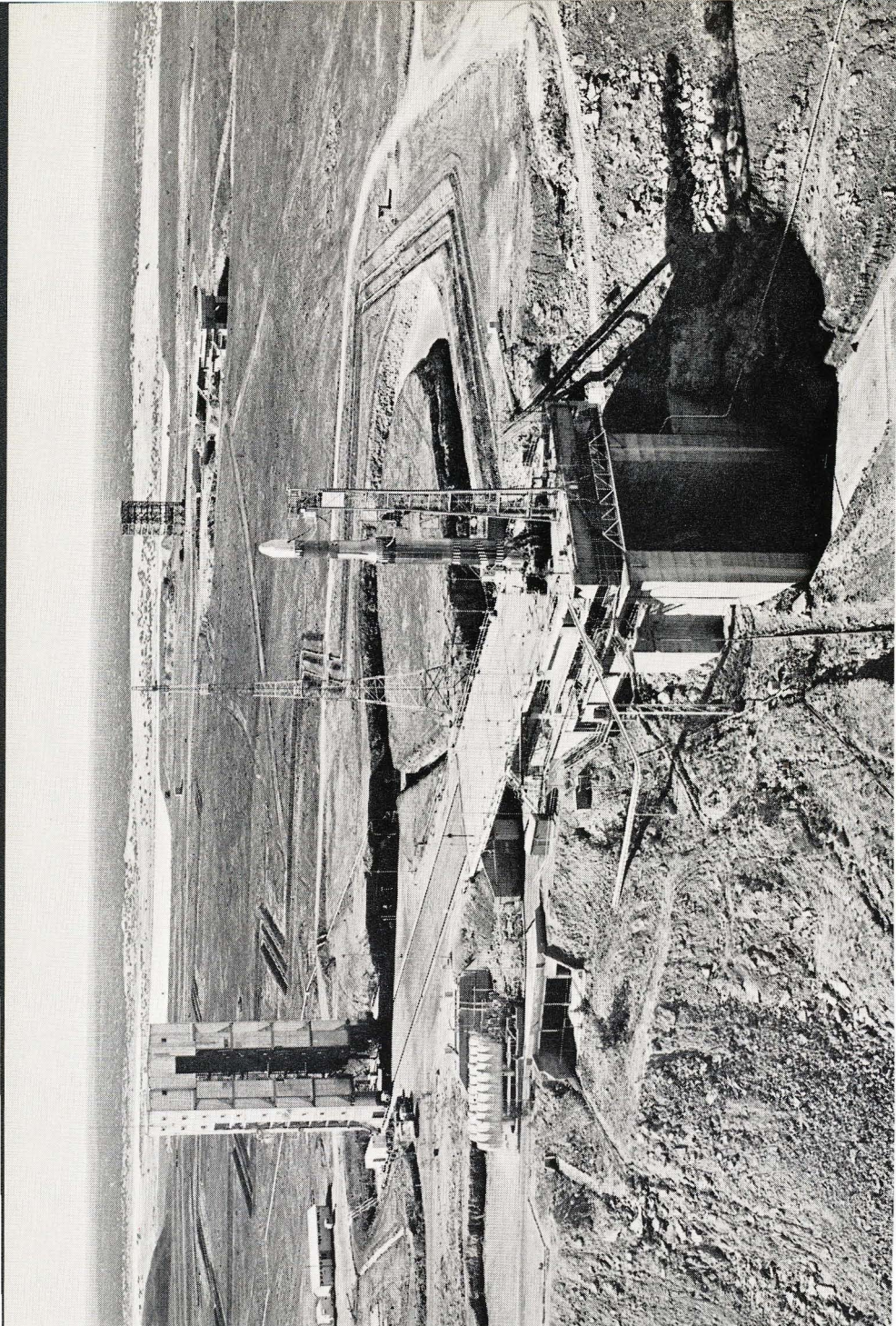
The supersonic wind tunnel at Salisbury.

An aerial for telemetry auto-follow equipment at Woomera.

*Weapons Research Establishment*

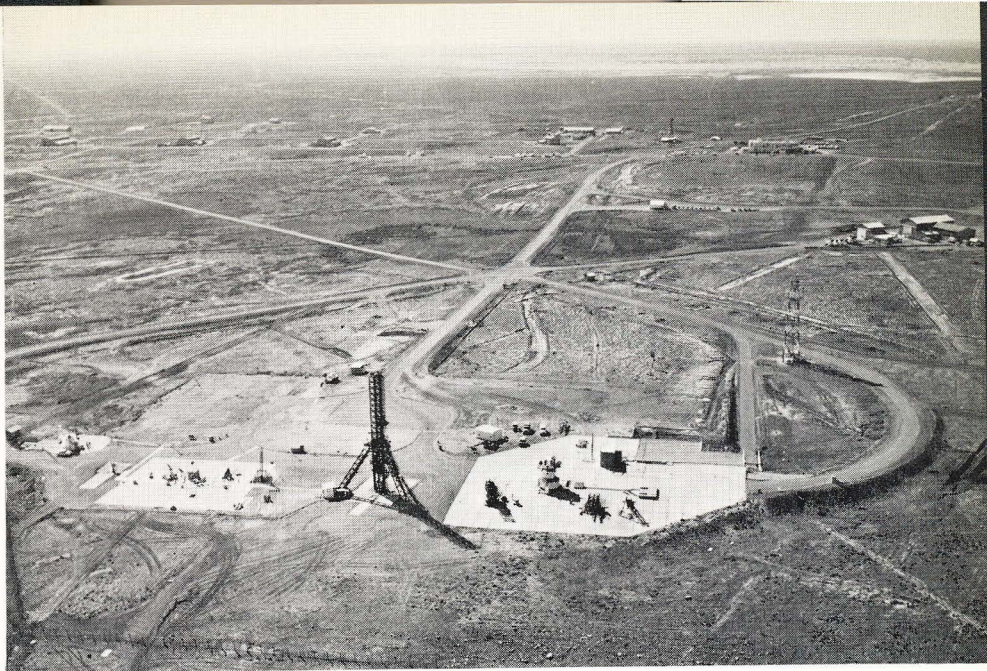






*Weapons Research Establishment*  
The European Launcher Development Organisation (ELDO) Europa I launching site.



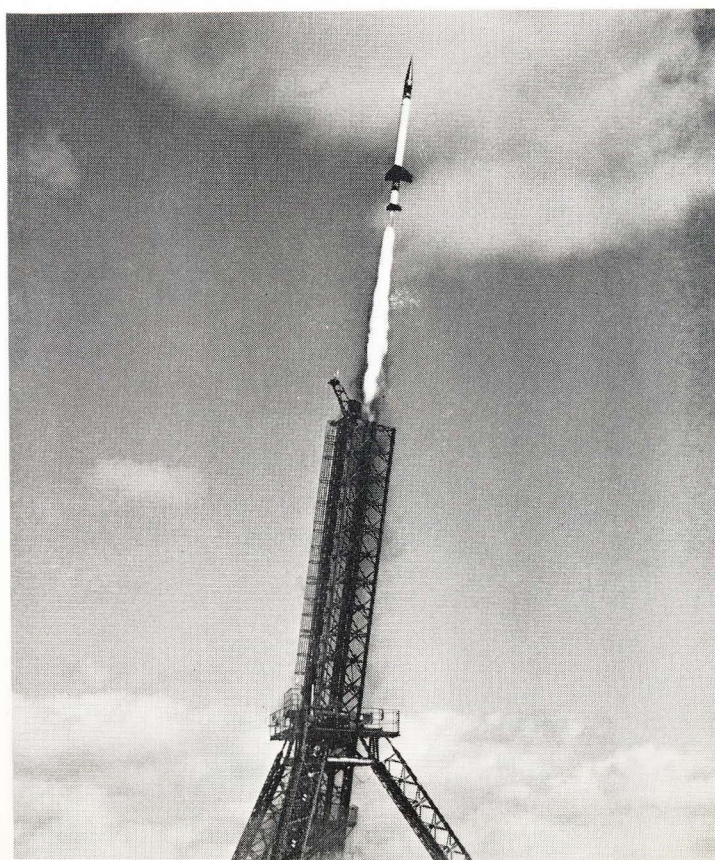


*Weapons Research Establishment*

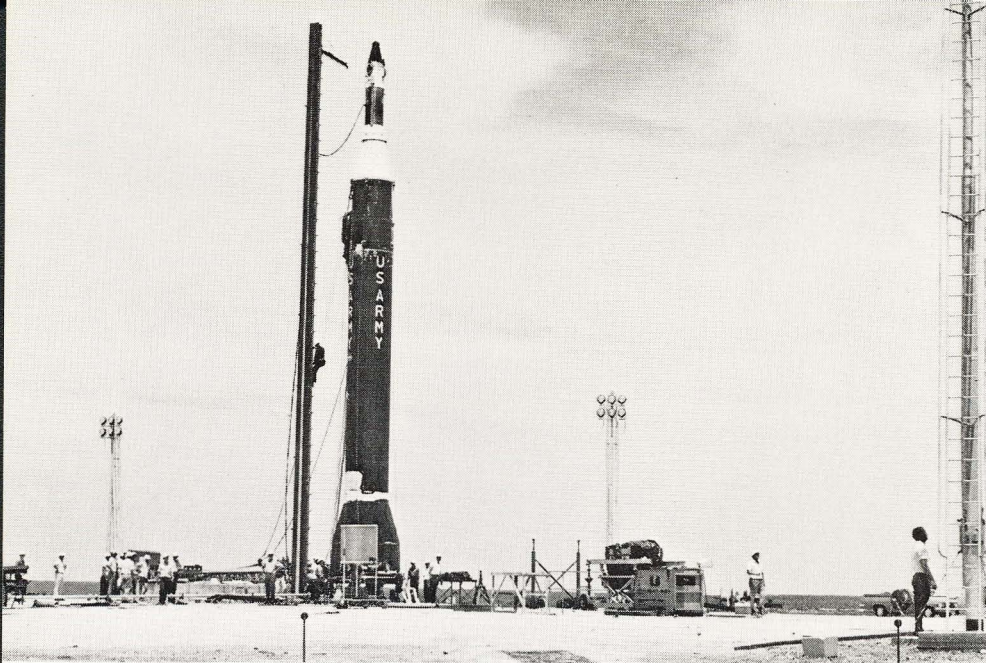
A launching area at Woomera.

A *Skylark* upper atmosphere sounding rocket is launched and will reach a height of about 150 miles.

*Weapons Research Establishment*





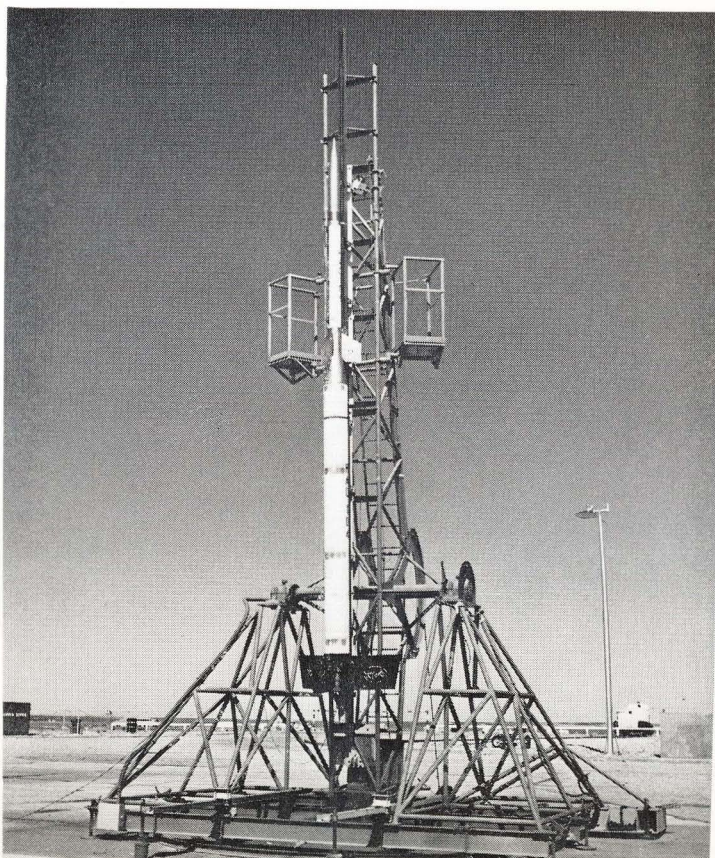


*Weapons Research Establishment*

A Sparta re-entry research vehicle used to study the re-entry of bodies into the earth's atmosphere at velocities of the order of 20,000 feet per second.

A HAD upper atmosphere sounding rocket on its launching tower. These rockets are fired to a height of about 80 miles.

*Weapons Research Establishment*



of sheep. Plant nutrition research has shown how added traces of elements such as copper and zinc enable large tracts of country, previously regarded as desert, to be farmed profitably.

The Division has its headquarters laboratory in the grounds of the University of Adelaide and a field station at O'Halloran Hill.

### **Division of Soils**

The aim of the research programme of this Division is to sustain and promote the productive capacity of Australian soils. This is undertaken through three groups of related activities. The first is the survey, description and mapping of the soil resources; the second the solution of problems associated with their development; and the third investigations into some of the aspects of soil about which there is a dearth of information.

The work is organised into several programmes, each of which comprises a number of projects. Because soil is a complex mixture of organic and inorganic materials, with a micro-flora and micro-fauna that vary with the material from which it is comprised, the climate in which it occurs, and the plants and animals that occupy its surface, very few problems in soils are capable of a unidisciplinary solution. Consequently, although the Division operates through seven Sections, Chemistry, Microbiology, Micromorphology, Mineralogy, Pedology, Physics and Zoology, several of the programmes involve work in more than one Section.

The headquarters laboratory is in Adelaide, with smaller groups in regional laboratories in Brisbane, Canberra, Hobart, Perth and Townsville. About half the staff are in the Adelaide laboratories, which hold the major groups for all sections except Micromorphology, which is at the Canberra laboratory. Not all the regional laboratories have each Section represented, but officers of the Chemistry and Pedology Sections are located at all of them, and officers of the Physics Section are located at Brisbane, Canberra and Perth.

### **Division of Horticultural Research**

This Division formerly known as the Horticultural Research Section has its headquarters in Adelaide and a laboratory located at Merbein in Victoria.

The majority of the work of this Division is directed towards vines but attention is also given to important tree crops such as citrus, peach and apple. Research is currently proceeding on five main topics: vine improvements; vine physiology; grape biochemistry; fruit tree research; and nematology. Experimental work is divided between the Adelaide laboratory which mainly conducts glasshouse and laboratory investigations, and the Merbein laboratory which is the base for field investigations.

### **Division of Mathematical Statistics**

This Division has its headquarters in Adelaide, but its officers are stationed throughout Australia. Many of its officers are located in various other C.S.I.R.O. laboratories, where they contribute through their statistical knowledge to many different research programmes. The Division has developed a number of fundamental research interests of its own, particularly in theoretical and meteorological statistics.

## **THE INSTITUTE OF MEDICAL AND VETERINARY SCIENCE**

The Institute of Medical and Veterinary Science was established by Act of Parliament in 1937 to incorporate the functions of the former Adelaide Hospital Laboratory. Its present main buildings were occupied in May 1939. The war years and those which immediately followed were so abnormal and conditions so



difficult that any development which would normally have occurred was delayed severely. The period of relatively great expansion of its services and activities commenced in 1950 and is still continuing today. The increase in work is reflected in the increased number of tests performed by the Institute over the years since its inception. In 1967-68 there were 860,910 tests carried out compared with 175,528 in 1952-53 and approximately 27,000 in 1938-39.

The Institute is administered by a council responsible to the Minister of Health. The Director of the Institute is the chief executive officer of the council.

### The Institute of Medical and Veterinary Science

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Staff at end of year:					
Graduate .....	57	60	60	66	73
Other .....	182	187	203	213	246
Tests performed .....	477,555	551,195	618,853	721,993	860,910
Revenue:	\$	\$	\$	\$	\$
State Government grant .....	574,000	674,000	707,000	836,217	1,000,000
Fees for laboratory tests .....	184,216	229,136	259,949	299,909	355,278
Other .....	32,894	43,760	46,589	52,897	56,899
Total .....	791,110	946,896	1,013,538	1,189,023	1,412,177
Expenditure:					
Salaries and wages .....	581,876	658,634	726,627	821,533	925,192
Other .....	239,494	215,332	242,001	294,847	337,631
Total .....	821,370	873,966	968,628	1,116,380	1,262,823

The Institute provides diagnostic facilities in all branches of clinical pathology for the Royal Adelaide Hospital and other metropolitan and country hospitals, for public health authorities, for industry, and for private practitioners. It also undertakes work in all branches of veterinary pathology for the Department of Agriculture, and for veterinary practitioners and stockowners. Research is conducted into selected problems connected with disease in man, and in animals of economic importance. The staff of the Institute takes part in the teaching of the medical sciences to graduates, students and technicians.

During 1968 the Institute opened a new Division of Nuclear Medicine in the Royal Adelaide Hospital. This Division undertakes a variety of diagnostic tests using radio-active isotopes to indicate the anatomical and physiological state of different parts of the human body.

### WAITE AGRICULTURAL RESEARCH INSTITUTE

The Waite Agricultural Research Institute was established, within the University of Adelaide, in 1924.

The research projects conducted at the Institute cover a wide range of topics, of which the following are a few examples: relationship of stocking rates to pasture composition and fertiliser practices; the protein chemistry of the wheat grain; the genetics and breeding of cereals and pasture plants; flower and fruit





*Robert Edwards*

The site of rock engravings on Moolawatana Station in the Flinders Ranges. This rocky gorge containing a water hole is typical of many sites where pre-historic Aborigines have left engravings.

Engravings on Moolawatana Station—these lizards are approximately twelve inches long.

*Robert Edwards*







*Robert Edwards*

This Aboriginal stone arrangement at Observatory Hill in the Great Western Desert is a ritual site associated with a legendary ancestor of the Pitjantjatjara Tribe.

Rock engravings at Red Gorge, near Copley, in the Flinders Ranges form part of one of the first sites of Aboriginal engravings to be discovered in South Australia.

*Robert Edwards*





development in horticultural plants; studies on soil-borne and virus diseases of plants; the nutrition of the honey bee; and the biology and control of the *Sirex* wood-boring wasp.

Further details relating to the Waite Institute may be found on pages 171-2.

### THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

The Australian Mineral Development Laboratories, formerly the Research and Development Branch of the Mines Department, is a corporate body constituted under The Australian Mineral Development Laboratories Act, 1959.

Established in January 1960, for a period of five years to provide contract services for the investigation of problems relating to the development of mineral resources, mineral processing and utilisation of mineral products, the Laboratories are controlled by a council with representation from the Commonwealth and State Governments and from the Australian Mineral Industries Research Association Ltd.

In 1963 the Act was amended to provide for the continued operation of the Laboratories on a permanent basis and also to confer a greater degree of autonomy upon the organisation. Early in 1964, agreement was reached with the contributing parties regarding the guarantee of funds which resulted in annual guarantees of \$240,000 from the State Government and \$120,000 each from the Commonwealth Government and the Australian Mineral Industries Research Association Ltd. Under this arrangement, each contributing party undertakes to supply the Laboratories with work to the value of the amount guaranteed. With the increasing number of projects being received from industry in general, however, the Laboratories have now progressively built up contract research earnings to more than \$1 million.

Currently, work is undertaken in the field of mineralogy and petrology, analytical chemistry, industrial chemistry, metallurgy, ceramics and operations research. Mineral exploration services and materials technology services have been recently instituted and the Laboratories now also undertake technical consulting in the mineral and associated fields.

The Laboratories have become one of the world's leading facilities for work on phosphate, uranium and rare-earth ores. Besides appreciable developmental activity on various mineral processing methods, the staff have been engaged in work on corrosion, desalination, dust hazard problems and other new areas of activity such as the utilisation of bacteria for mineral processing, and the use of mathematical and statistical studies for assisting mineral exploration.

### INTERNATIONAL CONGRESS OF SOIL SCIENCE

An International Congress of Soil Science is normally convened every four years under the auspices of the International Society of Soil Science. The ninth Congress held in Adelaide from 6-16 August 1968 was the first to be held in the Southern Hemisphere, or in any country of the British Commonwealth since the one at Oxford, England in 1936. It therefore provided a rare opportunity for many overseas members to examine our soils and observe the standard of soil science in Australia. Local soil scientists were able to meet the world's leading authorities from many countries and to gain some advantage from personal contact and discussion on outstanding problems of mutual interest.

Among 866 people enrolled for this Congress there were 642 full members and 224 associates (wives and students). All members attended in their own right as recognised scientists of the Society, and there were no official 'delegates'

from any country. Members attended from 52 countries including 118 from U.S.A., 44 from New Zealand, 30 from United Kingdom, 28 from Canada, 23 from U.S.S.R. and 491 from Australia.

The Congress programme was designed to encourage discussion on selected themes, namely Nutrients in Soil; Weathering and Soil Formation; Soil Organic Matter; Transport Processes in Soil; Surface Chemistry, and Classification with a special forum on Soils in Relation to Rice.

A Soil Science Congress (and the Society) involves a complex of seven commissions, each with its own programme of separate meetings, dealing respectively with: Soil Physics; Soil Chemistry; Soil Biology; Plant Nutrition; Soil Classification, Genesis and Cartography; Soil Technology; and Soil Mineralogy. At this Congress, however, there was provision for joint sessions of two or more commissions with a common interest in particular themes. With that provision the programme provided facilities for up to five separate meetings on any one day.

A final selection of 313 papers from manuscripts and abstracts previously submitted was presented at the Conference. The selection was based entirely on (a) the scientific standard of each contribution, and (b) its relevance to the prescribed themes. For the first time at any Congress the papers were printed outside Europe and before the Congress had commenced.

The Congress Proceedings in four separate volumes (an approximate total of 1,200,000 words) was supplied to all members on their arrival at the Congress venue. Under the rules of the International Society a paper can be submitted in any one of the three official languages: English, German, or French. Therefore all papers were printed and could be discussed in the appropriate language. A tri-lingual summary of every paper was also printed in the 'Proceedings'.

A Handbook of Australian Soils was compiled to commemorate the ninth International Congress in Adelaide. This book was designed as a prestige volume of 435 pages. It includes a general description of all major soil groups within Australia, and detailed descriptions of profiles which were inspected on tours conducted during the Congress. For the first time in any such book, micromorphological data are given for about eighty profiles, including examples from most major soil groups. There are forty-nine profiles portrayed in colour and 168 supporting photographs in black and white, mostly relating to micromorphology. The data from physical and chemical analyses are recorded in detail in tables that are of uniform format for every profile.

The Congress Programme was printed in Adelaide as separate booklets in English, German and French, with notes on formal meetings and social events. Outstanding events and entertainments included:

- an address by the Governor-General of Australia;

- a soils exhibition; 'The Soils of Australia—Soil Science and Technology in Action';

- a trade exhibit of scientific equipment designed and/or made within Australia, including soil sampling tools, soil treatment equipment, soil grinders, soil and plant testing apparatus, laboratory equipment, and meteorological equipment;

- a machinery exhibit showing how modern farm implements have been developed and the purposes for which they are used in Australia, such as land clearing, general tillage, and harvesting.

To provide a multi-lingual translation service electronic equipment was hired to meet the requirements for five simultaneous, separate meetings, each with three languages internally broadcast on a specific frequency. The interpretation service was provided by eight experienced interpreters supplemented by twenty-one interpreters recruited and trained entirely in Adelaide.

## 6.4 CULTURE AND RECREATION

### LIBRARIES

#### The State Library

The State Library of South Australia has its origin in a collection of books assembled in London in 1834, two years before the province of South Australia was founded. The modern character of the Library was established in 1940 when, after the Price Report of 1937, the Library was separated from the Museum and Art Gallery and became a State Government department administered by the Libraries Board of South Australia. At the present time the Library is organised in three divisions: Reference Services, Lending Services and Technical Services.

The Library has a representative basic collection of nineteenth and twentieth century materials in all subjects except medicine and law. It has considerable strength in a number of subjects including South Australian publications, librarianship, wine, Australian Aborigines, River Murray shipping, sailing ships, and nineteenth century illustrated works on natural history. In addition there is an extensive collection of tape recordings of Australian authors, folksongs and Aboriginal music. The Library is an official depository for the publications of the United Nations, Unesco and some of the other specialised agencies, and the publications of the Australian, British, Californian, and Philippine governments.

The oldest section of the Library is the Reference Library which is the central basic collection. Since 1946, except for rare, irreplaceable volumes, the books have been available for loan. About 5,000 periodicals are taken annually, and the newspaper reading room files 317 foreign and local newspapers; in 1967-68, 54,831 periodicals were lent. Legislation since 1878 provides for the deposit in the Library of copies of all items published in South Australia.

The Research Service, established in 1942, received 8,442 enquiries in 1967-68, mainly from industry. It supplies lists of references and arranges for the borrowing of books and periodicals selected from those lists as well as books and photocopies from interstate and overseas libraries. The service has an extensive collection of trade catalogues. The service also arranges documentary film evenings throughout the year in the lecture room. *Pinpointer*, a monthly index of popular Australian periodicals and *Index to Australian Book Reviews* are published.

In 1919 the Archives Section was established for the collection of original South Australian historical material. In 1925 legislation was passed forbidding the destruction of government documents without reference to the Libraries Board. At the end of June 1968 there was over 12,400 feet of occupied shelf space in the Archives. In 1967-68, there were 4,106 enquiries for which 13,951 issues (consisting of maps, views, documents or printed sources) were produced. A journal, *South Australiana*, is published twice a year.

The Reference Division also staffs seventeen libraries in other government departments.

The Children's Library was established in 1915 and is believed to be the oldest in Australia. The carefully selected books include about 6,000 rare and old books in a special study collection. School classes visit the Library, and talks are given to groups of parents and to various societies.

People living outside the Adelaide metropolitan area are served by the Country Lending Service which began lending books in 1938. This service has 13,618 active borrowers, of whom 6,901 are children. During 1967-68, 16,511 books were despatched in boxes to schools. Books are also lent to associations, clubs and gaols. The Service also acts as a central pool for books and a central clearing house for enquiries from local public libraries. About 14,000 requests from these libraries are received each year.

In 1946 the Adelaide Lending Service was opened to serve metropolitan readers. Books were lent to 46,174 borrowers in 1967-68. There are special collections of books in foreign languages. Six hundred and thirty sets of plays were lent to play-reading and acting groups.

Another active section is the Youth Lending Service established in 1957 catering for the needs of young people between the ages of thirteen and eighteen years. The Service was used by over 14,000 young people in 1967-68. The collection, besides general literature, includes publications dealing with hobbies and careers of special interest to adolescents.

The Technical Services Division besides the usual cataloguing and accessions sections includes a bindery which employs more than fifty persons, and a large photographic section. Photographic and xerographic copying facilities are available to the public and much work is done for the Library itself. In 1962 the Libraries Board began an extensive programme of publishing facsimile editions and other works of Australian interest. Over 140 works have now been published. Long playing records have also been issued. Other publications include several series of *Occasional Papers* in various subject fields, and an annual, *Miscellanea Musicologica*, published in association with the University of Adelaide.

#### State Library of South Australia

Year	Reference Library	Childrens Library	Country Lending Service (a)	Adelaide Lending Service	Youth Lending Service	Total
At 30 June	VOLUMES HELD					
1964.....	220,558	34,178	220,660	44,528	14,254	534,178
1965.....	227,613	35,991	262,036	46,192	14,858	586,690
1966.....	235,715	36,069	301,385	46,877	15,523	635,569
1967.....	243,398	38,073	328,168	47,046	15,535	672,220
1968.....	250,721	38,937	360,965	48,266	15,292	714,181
To 30 June	VOLUMES LENT					
1964.....	73,454	236,355	208,893	258,487	118,294	895,483
1965.....	78,318	234,797	215,383	266,818	112,397	907,713
1966.....	79,214	208,229	211,842	270,613	102,158	872,056
1967.....	89,639	209,245	219,133	283,563	99,304	900,884
1968.....	107,662	261,248	199,951	316,575	111,513	996,949

(a) Volumes held include volumes on loan to local public libraries. In 1967-68 such loans amounted to 228,872. These have not been included in volumes lent.

The erection of a new building (the original main building was erected in 1884) was completed early in 1967. The first stage is three floors of approximately 2,174,000 cubic feet costing about \$3,000,000. The new building was officially opened as the State Library of South Australia in May 1967.

### Local Public Libraries

Local public libraries financed by municipal authorities are subsidised under the Libraries (Subsidies) Act, 1955-1958. With general oversight and planning by the Libraries Board, subsidies (\$153,433 in 1967-68) are paid on a dollar for dollar basis. Twenty-nine libraries, operated by twenty-two local government authorities, serving over half of the population of the State had been established by June 1968. In 1967-68 local public libraries lent 1,942,494 books to 143,147 registered readers. All book stocks (228,872 at 30 June 1968) are interchangeable with a central pool maintained by the Libraries Board.

### The Adelaide Circulating Library

The Adelaide Circulating Library also traces its origin to the collection of books dispatched from London shortly after foundation of the State. In 1884 the collection which had grown from this nucleus was divided, the text and reference books going to the newly formed Public Library, and the remaining works constituting the Adelaide Circulating Library.

The Library, which receives a small government grant each year, is controlled by a committee elected by subscribers.

At 30 June 1968 the Library contained over 79,000 volumes, and subscribers during the year 1967-68 numbered 2,943.

### Institute Libraries

In 1884, when the Public Library was established, there were already in existence 108 institutes with a combined membership of 5,000.

Institute libraries are situated in the metropolitan area and in country areas throughout the State. These libraries are largely dependent on members' subscriptions but also receive a government subsidy. Many institutes receive considerable support from local councils.

The Institutes Association of South Australia Inc. acts as a co-ordinating authority and as a purchasing agency for the majority of institutes; these, however, retain complete autonomy, being governed by a committee elected by members.

The borrowing facilities of institute libraries are available only to subscribers, although at some libraries the general public has access to, and the use of, reading facilities. Many libraries cater for children.

The conduct of institutes is regulated by the Libraries and Institutes Act, 1939-1967.

### Institute Libraries, South Australia

*At 31 December*

Particulars	1964	1965	1966	1967	1968
Number of institutes .....	204	203	200	199	193
Subscribers .....	23,651	23,038	22,563	22,658	21,422
Number of volumes .....	725,335	751,209	756,671	755,877	769,656
Volumes circulated during year ..	1,933,184	1,854,057	1,811,704	1,629,300	1,478,375



### Other Libraries

Particulars relating to the Barr Smith Library (477,000 volumes at 31 December 1968) at the University of Adelaide and the Flinders University Library (121,700 volumes at 31 December 1968) are given on pages 171 and 175 respectively. Other libraries include those of the Royal Society of South Australia (approximately 24,000 volumes), the South Australian Branch of the Royal Geographical Society of Australasia (approximately 16,000 volumes) and the Parliamentary Library (60,000 volumes).

## MUSEUMS

### The South Australian Museum

Founded as a subsidiary of the South Australian Institute in 1856, the South Australian Museum was subsequently administered under the joint Board of the Public Library, Museum and Art Gallery and became a separate government department under the provisions of the Museum Act, 1939. Since then it has continued to develop as the focal point of natural history activities in this State.

Like most public museums, it serves a three-fold purpose—preservation, research and public education.

Several of the collections of specimens and data are outstanding; the collection of Australian ethnological objects being of world renown.

A staff of fifteen professional research workers is responsible for the care of the collections, and for undertaking research, both pure and applied, on specimens under their control. This work is published in the *Records of the South Australian Museum*, and in other scientific periodicals.

Public education work includes the presentation of the latest information on the natural history of our unique fauna and flora in public display galleries covering nearly 40,000 sq ft. Educational booklets setting out useful information on a variety of subjects are published and sold to visitors at nominal cost.

### Other Museums

A number of historic residences serve as museums. In 1961 the 'Old Government House' at Belair was refurnished with relics of the colonial era and opened for public inspection. At 'Whalers' Haven', Victor Harbor, a pioneer cottage has been restored and features many relics of early settlement with particular emphasis on the whaling industry. The home of the poet Adam Lindsay Gordon, 'Dingley Dell' at Port MacDonnell, is maintained as an historic house and Captain Charles Sturt's original home at Grange is open to the public. Items of historical interest are exhibited in old buildings in many of the early established country towns.

Various items of maritime association including pictures, models and fittings from early ships are displayed at the Nautical Museum at Port Adelaide.

A number of special museums are maintained at the University of Adelaide for the use of the staff and students and a Museum of Economic Botany is associated with the Botanic Garden.

### The National Trust of South Australia

The National Trust of South Australia was established by Act of Parliament in 1955. The Trust is administered by a council and is financed by gifts, legacies and subscriptions and controls twenty-nine branches in country areas.

The Trust encourages the preservation of buildings of architectural and historic interest; one of its most recent acquisitions being Beaumont House, Beaumont Common built by Bishop Short, the first Bishop of the Diocese of Adelaide. It

also aims to preserve lands of beauty, such as 'Wilabalangaloo', Berri, and to protect and develop the native flora and fauna as at 'Watiparinga' Reserve, Eden Hills and 'Roachdale', Kersbrook. The Trust is also interested in preserving areas of scientific interest, the G.S. Sandison Reserve at Hallett Cove, with its glacial pavements, being such a property. At 31 December 1968 the Trust controlled twenty-six reserves totalling 2,137 acres, together with six folk museums in various country centres and a horse-drawn vehicles museum in the metropolitan area.

In 1963 the paddle steamer *Marion* was purchased and refitted by the Trust and now floats in the old graving dock at Mannum.

### ABORIGINAL RELICS

The recorded history of Australia is only a short time compared with the tens of thousands of years of prehistory since the first arrival of man on the Australian continent. In the study and appreciation of this prehistory, the relics of past material cultures play a vital role, as they provide the evidence of societies which have developed and waned.

There has been in South Australia since its foundation a certain appreciation of the value of Aboriginal culture. Among the first government appointments was that of Protector of Aborigines and the Proclamation establishing the Province in 1836 paid particular attention to the rights and needs of the indigenous people, stating that the natives 'are to be considered as much under the Safeguard of the law as the Colonists themselves, and equally entitled to the privileges of British subjects.'

Many invaluable records of the Aborigines of this time have come from pioneer missionaries who took an interest in Aboriginal welfare, and some of the earliest contemporary observations were recorded by the explorers, notably Eyre, who proved himself a considerate and understanding Protector of Aborigines. The artist George French Angas captured some of their features and details of their artefacts in his watercolours.

Despite sympathetic understanding on the part of many of the pioneer settlers, and the earnest endeavours of Governments in Adelaide and London, what had been an optimistic beginning in South Australia brought the same end result as in the other States; the extinction of most of the tribes inhabiting the fertile regions, other groups reduced to small numbers of part-caste survivors and a few full-blood descendants of the nomadic groups of the remote areas.

Closer settlement transformed a series of well established tribal territories into a chain of archaeological sites, and in the haste to consolidate and extend settlement, prehistoric camp-sites and ceremonial grounds were ploughed under, native wells were used for stock, carved trees were fired, and quarries, cave paintings and rock engravings were neglected and left to the mercies of weather and vandalism; many portable relics suffered a similar fate.

In central and northern Australia the Aboriginal found sanctuary and delayed the destruction of his culture, but under the pressures of development the remaining Aborigines have been progressively abandoning their traditional ways of life. Because of this, the need to preserve relics of their culture has become even more important. Artefacts already gathered and lodged in a museum collection are afforded a degree of protection and are no longer submitted to the hazards of fire, vandalism and carelessness, although neglect or unsuitable storage facilities may destroy them inside a museum.

For many years there have been groups in South Australia ready to work actively for the preservation of relics in the field. Since the 1880s various

committees formed and recommendations put forward have resulted in little or no positive action. However, in 1963 the Department of Lands convened a conference to discuss action on the protection and preservation of South Australian rock engravings and cave paintings, with particular reference to the rock engravings at Panaramitee Station in the north-east of the State. These engravings have aroused considerable interest since they represent an extensive and interesting collection of designs which are believed to date back to the earliest times of Aborigines in Australia.

Representatives of the Lands Department, South Australian Museum, Department of Aboriginal Affairs, Flora and Fauna Advisory Committee and University of Adelaide met in mid-October 1963. The specific problems of the conservation of sites in South Australia were analysed and the committee came to the conclusion that the Museum was the only body with the appropriate experience and knowledge for the administration of possible relevant legislation. The Minister of Lands subsequently put recommendations before Cabinet to authorise the Parliamentary Draftsman to prepare a Bill.

The Bill was introduced to the Lower House in August 1964 and passed all stages, but lapsed after debate in the Legislative Council. A revised attempt, drafted by a group of private members of the Council, was treated as a matter of urgency and with few amendments became the Aboriginal and Historic Relics Preservation Act, 1965.

After proclamation, the Act enabled a programme for the preservation of Aboriginal relics (and Historic relics of European origin) to be put into effect.

Responsibility for the Act was vested in the Minister of Education whose portfolio embraces the administration of the South Australian Museum, previously the sole official organisation with a recognised obligation to foster the aims of conservation. The Director of the Museum Department is *ex officio* Protector of Relics, with executive responsibility for the Act. The first move to give the Act practical effect was the setting up of an Advisory Board, initially of five members and a secretary. The first informal meeting of the Board was held in July 1967 and the Act was gazetted a few weeks later, on 3 August. Under the Act, which provides for penalties of up to \$200 or imprisonment for three months, it is an offence to conceal, destroy, deface or damage Aboriginal relics such as cave paintings, rock engravings, stone arrangements, archaeological sites, burial grounds or canoe trees. Anyone who finds, or knows of such relics is obliged to report the fact to the Protector of Relics, the nearest police officer or an Inspector or Warden appointed under the Act.

### **Prohibited Areas and Historic Reserves**

The Minister has the power to protect a particular relic, or series of relics, by declaring the area in which it is found either a Prohibited Area or an Historic Reserve. Where significant relics are in a position so exposed either to the elements or to interference by people that they are liable to rapid and serious deterioration, the surrounding area would normally be declared a Prohibited Area. Once declared, it is an offence to enter the specified area without the permission of the Minister or the Protector of Relics. Where a relic occurs on private property, it is also necessary for the owner of the property to give his permission.

In some respects this is a negative procedure, but it does have the effect of severely restricting the number of people who, by carelessness or wilful vandalism, are likely to precipitate the premature loss of important sites. However, it is far from being entirely negative, for while it closely restricts the opportunity of a chance passerby to have a quick look at something vaguely interesting and

Aboriginal, it in no way prevents the enthusiastic and interested person from seeing the particular monument at close quarters. Nor is it a matter of displaying relics only to the keenly interested. There is nothing to prevent parties of people who either separately or as a group might present a hazard to the site if unaccompanied, from being shown the site and informed about it by a responsible guide. If it is considered necessary, the Minister has the authority not only to declare an area prohibited but also to erect physical screens or shelters to lessen the effects of vandalism or weathering. In some cases the erection of such a structure may protect a vulnerable relic without the necessity to declare the area prohibited.

When relics are found in good condition, not threatened with early disappearance from the effects of weathering or fire, or are in areas not frequented by tourists, they may be protected by declaring the area an Historic Reserve. Here access is unrestricted, and no permits are required. Well preserved rock engravings or red gum trees from which bark has been removed for canoes are in this category. Unlike a painted sandstone rock shelter, no great threat is posed to such relics by human activities, short of the destruction with malice aforethought which nothing less than a total ban on all visits can prevent.

Under the Act it is obligatory for the Protector of Relics to maintain a complete register of all prohibited areas and reserves and also of unproclaimed known occurrences of relics, and to inspect regularly and report annually to the State Government upon their preservation. It is also required that an active search must be carried out to locate new relics and make arrangements for their adequate protection.

### **Collection of Relics**

The Act places no prohibition on the collection of portable relics. Stone implements can therefore still be removed from open camp-sites, but having once collected them, it is the responsibility of the finder to look after them. They may not be bought or sold without the consent of the Protector. Although not obligatory under the Act, it is desirable that such portable relics are clearly marked with the locality where they were found, as for much of arid South Australia these artefacts are the only evidence of occupation by prehistoric man. By dating specific stone industries in the few archaeological sites known it is possible to establish a pattern of diffusion at different times over the past twenty thousand years. Such interpretations are not possible if portable relics are removed without adequate record, or as in some instances, cut and polished as gem stones.

Another provision of the Act enables the Minister, or Protector, to purchase land upon which immovable relics are located, and if necessary direct the excavation and removal of portable relics to safe storage in the State Museum. The Minister also has the power to acquire land compulsorily for the purpose of preserving unique and irreplaceable relics.

### **Inspectors and Wardens**

To give practical force, the Act provides for the appointment of Inspectors and Wardens, who may demand names and addresses of suspected offenders, search for, examine or seize any relic, or require anyone reasonably suspected as likely to damage a relic, to leave a reserve. Inspectors have the additional power to arrest persons refusing to give personal details, or who provide false information.

Under the Act, all police officers are Inspectors, and in addition officials of a wide range of government departments such as the South Australian Museum,

Department of Aboriginal Affairs (in particular Superintendents of Aboriginal Settlements), Lands Department, Fisheries and Fauna Conservation Department, Woods and Forests Department, National Parks Commission, Art Gallery Department, Botanic Gardens Department and the Weapons Research Establishment have been designated. In addition to these semi-official appointments, individuals have been made Inspectors and Wardens; owners of properties where Prohibited Areas and Historic Reserves are being proclaimed, officers of a number of societies and persons of known character who are interested in the conservation of relics. Recommendations for appointments go from the Advisory Board to the Minister, and once given Cabinet approval are made in Executive Council and published in *The South Australian Government Gazette*. An instrument of appointment is then prepared by the Protector of Relics setting out the area of jurisdiction.

Perhaps the most interesting single appointment has been that of Mr. Andrew Coulthard, a member of Anjimatana Tribe, as Warden to watch over the relics of his people in the Flinders Ranges. It is the policy of the Board that wherever possible Aborigines should be entrusted with the responsibility of safeguarding Aboriginal relics.

#### Administrative Procedure

Since the Act was brought into operation a simple line of procedure for dealing with sites has evolved. When a relic is first discovered and reported (by a landowner, a tourist, an Inspector, Warden or any other person) as many details as possible are obtained directly from the finder. The description and location are then checked against Museum records to see what work, if any, has already been done on the site. This avoids unnecessary duplication of effort, for particularly near cities, larger country towns, or popular tourist areas, it is inevitable that the same relic will be reported over and over again, each time with a description sufficiently misleading in itself to suggest that it may be a new find.

Once reported and checked, the new relic is referred to a local Inspector or Warden, the extent of whose knowledge of things Aboriginal and judgement of their worth is known; he then carries out a preliminary inspection and reports his findings. Careful questioning will in most cases elicit a reliable assessment of the situation. If the site is still considered of sufficient potential significance, the Secretary of the Relics Advisory Board or an officer of the Museum makes an inspection of the site, if possible accompanied by a member of the Board. The property owner's opinion is sought and if required, his approval is obtained on a special form of consent prepared to simplify procedures. If necessary the matter will be referred to the State Planning Office or any department, local government body or person who may be concerned. The results of the full inquiry together with all relevant information, are presented to the Board at its next meeting, and the needs for protection of the particular site are discussed. If it is decided to recommend the site to the Minister for declaration as a Prohibited Area or Historic Reserve the correspondence, reports and consents are incorporated in an action docket and forwarded to the Minister. The matter is then referred by the Minister to the Lands Department for checking against their records and definition of the area to be proclaimed. The final decision is made by Cabinet and if the recommendation is accepted, the declaration is made at a regular meeting of the State Executive Council and announced in *The South Australian Government Gazette*. Upon gazetting, the location of the declared site is marked on public plans held in the Lands Office, the property owner concerned is notified, and particulars are made available to the Royal Automobile Association for noting on tourist guides and maps. The Australian Institute of Aboriginal Studies is also advised for the information of research workers.

The State Government made available for the purposes of the Act a sum of \$5,000 for the 1968-69 financial year. This money was used to establish essential permanent administrative machinery for implementing the Act. Declared sites will be signposted and if necessary fenced. The fact that restrictions are imposed will be pointed out, and at the same time an explanation of the need for protection will be made. Brief descriptions and assessments of the separate sites will contribute to the aims of conservation by widening public awareness of the culture which it seeks to preserve. However, in law the fact that a notice is not erected on a reserve does not affect the liability of any person for a contravention of any provision of the Act.

As the Act gives a blanket protection to all Aboriginal relics in the State whether recorded or unrecorded, known or unknown, the Advisory Board has adopted the policy that it will not recommend sites unless there is special justification. Relics located in frequented areas are in greater danger of damage than those in remote regions although isolation in itself is no longer a sure means of protection as the public of today has far greater mobility than a few years ago.

### **Public Relations**

A vital part of the Board's work concerns the establishment of good public relations. Legislation in itself can achieve little unless there is an enlightened public, anxious to see Aboriginal relics preserved and willing to assist. The old form of protection by keeping the locations of relics a close secret is no longer practical. With increasing population there are more and more people who with four wheel drive vehicles will travel great distances to visit sites or collect portable relics and publicity through press and television coverage of special projects such as the survey of canoe trees along the River Murray has increased contact with persons not previously interested or informed.

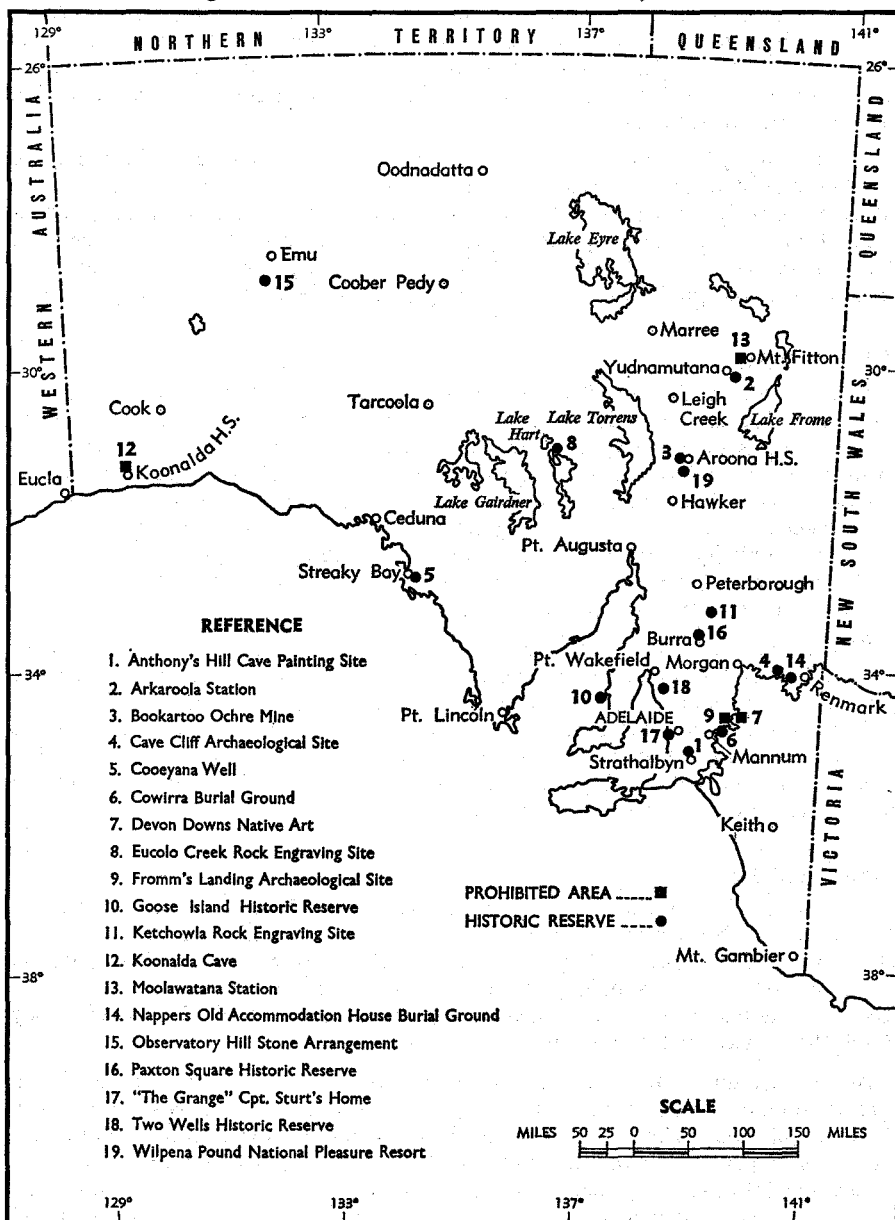
Wardens form a reliable and accessible source of local information and report on the state of known relics and the discovery of new ones. In their own areas they stimulate regional awareness of the importance of relics and the need for their preservation by their informal contact with other persons, talks to societies and articles in local publications, with the result that people with portable relics have been increasingly willing to come forward with them, either for identification and recording or as donations to the State collection.

### **Future Activity**

The supervision of activities is centred around the State Museum, where the Anthropology Department already holds a wealth of existing records of relics. These are vitally necessary for any comparison with past years, and it is logical that their continuation should be kept in the same hands. As portable relics are found and donated, or in some instances purchased, it is again logical that they should be housed with the existing collections.

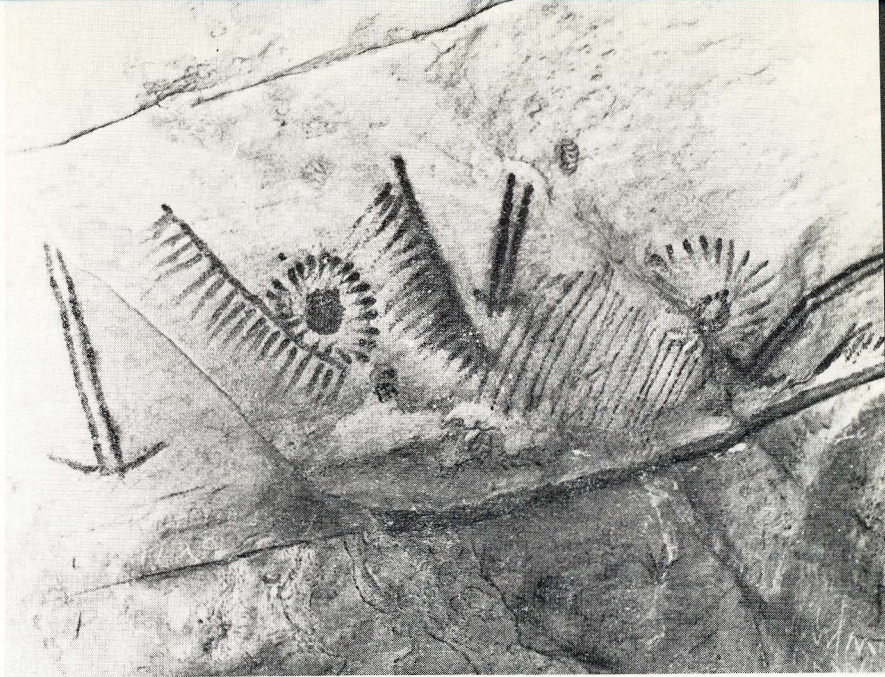
At the Museum, staff trained specifically in conservation should provide a central storehouse of expertise which can be expanded and improved rather than simply duplicated. Through their channels of communication with other museums, university departments, the Institute of Aboriginal Studies and other research bodies, the information gathered in the course of operation of the Act should be efficiently disseminated where required. Since the first group of Inspectors and Wardens were appointed in March 1968, new occurrences including three important archaeological sites, several groups of cave paintings and numerous other relics have been reported to the Board. Systematic study of these sites will be carried out by the Museum's Anthropology Department.

# SOUTH AUSTRALIA **PROHIBITED AREAS AND HISTORIC RESERVES** Under the Aboriginal and Historic Relics Preservation Act, 1965 at 30 June 1969



MAP 12





*Robert Edwards*

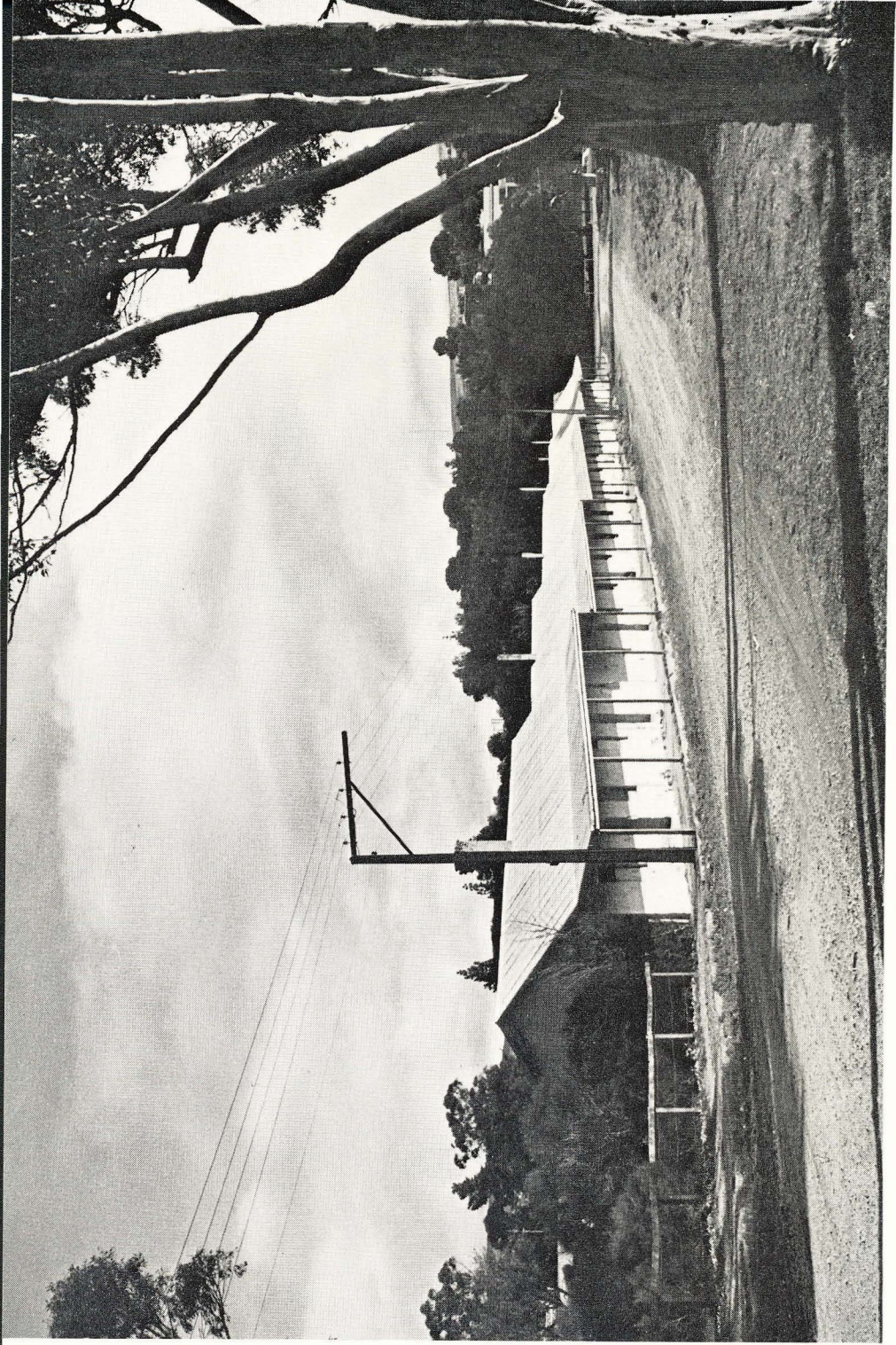
These cave paintings at Yourambulla, near Hawker, in the Flinders Ranges formed part of the culture of the living Aborigines and when necessary were repainted to maintain the record.

An archaeologist painstakingly removes charcoal from the remains of an ancient fire hearth in Koonalda Cave, which is being systematically excavated. This site, used 20,000 years ago, is the earliest record of man's occupation in Southern Australia.

*Robert Edwards*







*Robert Edwards*  
Relics of European origin may be declared under the Aboriginal and Historic Relics Preservation Act as have been these miners cottages built in the form of a square at Burra.

**Declared Areas**

At 30 June 1969 the following areas had been declared under the Act.

Anthony's Hill Cave Painting Site <i>Historic Reserve</i>	Aboriginal paintings comprising a series of small but well-executed human figures in strong movement painted in red ochre around sides and on to ceiling at rear of cave.
Arkaroola Station <i>Historic Reserve</i>	Camp-sites, cairns of stones and Aboriginal graves. There has been a report of rock engravings.
Bookartoo Ochre Mine <i>Historic Reserve</i>	Source of a unique ochre which was of considerable economic importance in trading between widely-separated tribes. Aborigines from as far afield as Charleville in Queensland are known to have visited the site to obtain the highly-prized ochre. Site also had sacred significance.
Cave Cliff Archaeological Site <i>Historic Reserve</i>	A large cave associated with the Aboriginal legend of the perpetual fire. Also a number of excellent canoe trees and a well-defined pathway used by Aborigines to gain access to camp-sites on cliff-top above the cave.
Cooleyana Well <i>Historic Reserve</i>	A traditional water supply for Aborigines of the Streaky Bay area. Has close association with exploration of the State as Edward John Eyre called at Well during his trans-continental journey in 1841.
Cowirra Burial Ground <i>Historic Reserve</i>	Burial ground of the local Aboriginal tribe who lived on the River Murray. Was used within living memory.
Devon Downs Native Art <i>Prohibited Area</i>	First site to provide evidence of the great antiquity of man in Australia. The numerous artefacts, faunal material and food remains found there enabled a sequence of prehistoric cultures to be established for southern Australia. Also many canoe trees.
Eucolo Creek Rock Engraving Site <i>Historic Reserve</i>	Many hundreds of engraved designs on rocks in bed of the Eucolo Creek and cut into the cliffs. Among these is a series of large bird tracks believed to represent those of the extinct Genyornis.
Fromm's Landing Archaeological Site <i>Prohibited Area</i>	Stone implements, faunal remains, food debris, early dingo remains (3,000 years old) and human burials have been discovered in excavations.
Goose Island <i>Historic Reserve</i>	Important religious site of the Narrunga tribe.
Ketchowla Rock Engraving Site <i>Historic Reserve</i>	Many thousands of engravings on rock surfaces surrounding a permanent spring. Stone implements are being uncovered by erosion of the land surface.
Koonalda Cave <i>Prohibited Area</i>	Evidence of flint mining activities some 20,000 years old. In deepest portion of the cave there are some simple rock engravings believed to be of comparable age.

Moolawatana Station <i>Prohibited Area</i>	Sites of Aboriginal camps and rock carvings.
Nappers Old Accommodation House Burial Ground <i>Historic Reserve</i>	An Aboriginal skeleton and a large trimmed core implement belonging to the Kartan industry have been found several feet below the surface. Other bones also have been found in vicinity, suggesting area was a burial ground. A line of implements was left exposed when 1956 floodwaters receded.
Observatory Hill Stone Arrangement <i>Historic Reserve</i>	An Aboriginal stone arrangement of limestone slabs; thought to have been associated with ceremonial ritual.
Paxton Square Historic Reserve <i>Historic Reserve</i>	Thirty-three 'terrace-type' stone cottages erected on three sides of the Square in 1853 as part of the South Australian Mining Association's extensive housing scheme for its miners in Burra.
'The Grange', Captain Sturt's Home <i>Historic Reserve</i>	Built in 1840-41, was occupied by Captain Sturt during the time he held high positions in the South Australian Government. From 'The Grange' he set forth on the epic 1844 Central Australian expedition. Has been restored as a memorial to the explorer.
Two Wells Historic Reserve <i>Historic Reserve</i>	Two wells, after which town has taken its name, originally used by Aborigines of the area. Later provided a watering point for travelling stock and wagoners.
Wilpena Pound National Pleasure Resort <i>Historic Reserve</i>	Arkaroo cave paintings and historic buildings.

## ART GALLERIES

### The Art Gallery of South Australia

The National Gallery of South Australia (since January 1968 The Art Gallery of South Australia) was opened in 1881. The first portion of the present building was completed in 1900 and this was greatly extended in 1936 as a result of a generous gift of \$20,000 from Mr Alexander Melrose and a grant of \$32,000 from the Government. The Gallery became a government department under the Art Gallery Board in 1940. In 1962 a three storey air conditioned wing was added, which has greatly increased its capacity.

The collections contain a token representation of the art of all periods and include excellent examples of Australian and British art.

The gallery has benefited by many bequests, the Ragless, Elder, Morgan Thomas, Boxall, David Murray and Mortlock bequests together totalling over \$252,000. Money has also been bequeathed for the Melrose Prize for a portrait or figure composition awarded every fourth year, and the Maude Vizard-Wholohan Prize awarded alternately for a landscape or a figure subject in oils; there are additional Maude Vizard-Wholohan prizes for water-colour, print and sculpture from time to time.



Many visiting exhibitions are displayed in the gallery. Film evenings, lectures and demonstrations are given and collections of pictures and reproductions are circulated in country districts. A quarterly *Bulletin* has been published since 1939. A reproduction lending service is used by over 300 schools and government departments.

#### **Other Galleries**

South Australia's first regional art gallery was opened at Naracoorte on 22 September 1968. In addition a number of small commercial galleries present exhibitions throughout the year. One such gallery at Hahndorf is of particular interest through its historic setting.

The Royal South Australian Society of Arts and certain retail stores maintain galleries in which a limited number of exhibitions are held each year.

Beginning with the Citizens' Art Group exhibition in 1954 and the Advertiser exhibition in 1955 there has been a growing interest in open air exhibitions as a medium for displaying local art. The 1968 Advertiser exhibition contained 1,055 exhibits submitted by 953 artists.

### **MUSIC AND DRAMA**

#### **MUSIC**

In orchestral performance in South Australia the South Australian Symphony Orchestra maintained by the Australian Broadcasting Commission (see below), plays a leading role. The University Music Society presents approximately ten subscription concerts each year including orchestral music, chamber music and various solo performances. In addition the Elder Conservatorium of Music arranges free Sunday afternoon concerts, lunch hour recitals by staff members and a number of student concerts including performances by senior and junior orchestras. Other performances include chamber music by local and overseas artists presented by Musica Viva.

The Elizabethan Theatre Trust Opera Company presents seasons of opera in South Australia and local groups active in this field include the Intimate Opera Group and the Gilbert and Sullivan Society. A number of societies and denominational groups make a regular contribution to choral music.

#### **The Australian Broadcasting Commission**

In the metropolitan area the South Australian Symphony Orchestra each year gives thirty orchestral subscription concerts, usually with an overseas conductor or soloist—often both—and twelve youth orchestral subscription concerts with overseas and resident conductors and soloists. The Australian Broadcasting Commission (A.B.C.) also presents a recital series of six concerts by overseas artists and four choral concerts with the Symphony Orchestra and the Adelaide Philharmonic Choir. In addition there are at least six free orchestral concerts annually, and frequently the A.B.C. presents a series of summer concerts.

During 1968 there were twenty-four free concerts with the South Australian Symphony Orchestra for schoolchildren in the metropolitan area. Two country centres, Mount Gambier and Broken Hill, have their own A.B.C. subscription series of four concerts; one by the South Australian Symphony Orchestra and three by world class recital artists. In addition the Symphony Orchestra goes on tour into the country and during 1968 visited twelve country centres. In all these centres, the Orchestra gave at least one free concert for schoolchildren as well as a public concert.

During the 1968 Festival of Arts, the Orchestra presented two concerts, and in association with the Melbourne Symphony Orchestra, choirs and soloists took part in two performances of the Mahler Symphony No. 8 which opened the Festival.

### **The Elder Conservatorium of Music**

The Elder Conservatorium of Music at the University of Adelaide provides a comprehensive course of training for students in degree and diploma courses, and also caters for external students by providing instruction in the various branches of music as single studies.

Particulars relating to the Elder Conservatorium at the University of Adelaide are given on page 172.

### **DRAMA**

Adelaide has one fully professional theatre, Her Majesty's, which is able to stage plays, opera and ballet and with a seating capacity of 1,150 usually stages overseas or interstate productions. Other theatres in Adelaide are 'intimate' and usually stage local productions although at times, especially during the Festival of Arts, they present interstate or overseas productions.

There are over twenty amateur theatrical groups operating in South Australia. The Adelaide Repertory Theatre Inc., which, with approximately 2,000 members, claims the largest membership of any amateur theatrical group in the Southern Hemisphere, has its permanent home at the Arts Theatre.

Many country centres support amateur theatrical groups and numbers of these combine annually for the South East Drama Festival and the Yorke Peninsula Drama Festival.

The Australian Elizabethan Theatre Trust, as well as presenting its own productions in Adelaide and certain country centres, gives some financial and other support to non-professional productions.

The Arts Council of Australia (S.A. Division) arranges some country tours by theatre groups while the adult education centres of the South Australian Education Department provide accommodation and some teaching for several amateur theatrical groups in country towns.

### **THE ADELAIDE FESTIVAL OF ARTS**

In ten years the Adelaide Festival, through five festivals, has received much acclaim, not only throughout Australia, but also overseas.

The idea of an arts festival was conceived late in 1958 by a group of Adelaide citizens, whose objective was a festival on international lines following generally the example of Edinburgh. Consequently, early in 1959 an administrative body was established which was supported by twelve volunteer committees. The reliance on voluntary effort has since remained an integral feature of the festival organisation.

Industrial firms and private individuals assisted financially by lodging guarantees while the Commonwealth and State Governments and the Adelaide City Council made substantial contributions.

Although not without disappointments and frustrations, the first festival, held in March 1960 and extending over fourteen days, was a reassuring success with

total attendances exceeding 300,000. It covered almost every aspect of the arts, with seventy-four performances for adult audiences as well as an element of popular entertainment out of doors.

Subsequent festivals held biennially saw a consolidation of the initial experiment and a broadening of the concepts envisaged. These later festivals benefited from the longer planning periods available, the establishment of a small permanent secretariat and international promotion and publicity programmes. By March 1964, the festival concept had been stabilised. Programmes had been expanded and many ancillary activities had been stimulated. Attendances continued to rise with noticeable increases in the numbers from interstate and overseas.

The five Festivals to date, the most recent in March 1968, have presented a blend of international and Australian performers. The programmes have been prepared with the co-operation and contributions of the Australian Broadcasting Commission, the Australian Elizabethan Theatre Trust, the Arts Council of Australia, the Musica Viva Society, the University of Adelaide, the Art Gallery of South Australia and many similar organisations.

There have been thirty-nine exhibitions, several from overseas, shown at the Art Gallery of South Australia as part of the Festival's visual arts presentations. Outdoor activities such as National Flower Day, free entertainment in Elder Park and a torchlight procession (in 1968), have added much to the colour and atmosphere of the Festival.

There were an estimated 20,000 visitors in Adelaide during the most recent Festival in March 1968. Of these, 5 per cent were from overseas, most of the remainder were from Victoria and New South Wales. There were 147,328 paid admissions to 326 official Festival presentations, and total attendances at all Festival attractions exceeded 700,000.

The next Festival, to be held in March 1970, will run for three weeks instead of two as in the past and the programme will be under the direction of Sir Robert Helpmann.

### BROADCASTING

The supervision of radio and television broadcasting is a Commonwealth responsibility and is carried out by the Australian Broadcasting Control Board under the *Broadcasting and Television Act* 1942-1968. An office of the Board is maintained in South Australia to administer the Act and in particular to supervise the programme content and the technical quality of transmission.

Radio and television stations fall into two categories; national and commercial. National stations are operated by the Australian Broadcasting Commission. These stations do not broadcast advertising material, the Commission being supported by an annual grant from Commonwealth revenue. Commercial stations are operated by companies licensed by the Postmaster-General and derive their revenue from advertising.

All radio and television receivers must be covered by licences issued by the Postmaster-General. Normal annual charges at 1 June 1969 were \$6.50 for a listener's licence, \$14.00 for a viewer's licence or \$20.00 for a combined licence, although reduced rates apply to pensioners who satisfy certain conditions and to persons living in remote areas, while licences are granted free of charge to blind persons and to schools. One licence covers all receivers owned by a

licensee or his family and normally held at the licensee's address. Special licences are required for radio and television receivers on hire, the responsibility for the licence being borne by the hirer, and not the user, of the receiver.

### Radio

The first stations to broadcast in this State were 5DN and 5CL. Station 5DN was issued an experimental licence in June 1924 and began operating under a commercial licence in February 1925. In November 1924, 5CL was licensed as an 'A class station', the forerunner of the national station. The technical management of 5CL was taken over by the Postmaster-General's Department in 1929 and the programmes by the Australian Broadcasting Commission in 1932.

Stations 5KA and 5AD followed in 1927 and 1930 respectively, and a second national station, 5AN, was established in 1937. The first country station was opened in 1931.

There are at present five metropolitan and eleven country stations operating. The country or regional stations relay programmes from metropolitan stations and in addition provide programmes of local interest.

The call signs and locations of stations are given in the following table, all call signs in South Australia being prefixed by the number '5'.

### Radio Stations, South Australia

*At 31 December, 1968*

National Stations		Commercial Stations	
Call Sign	Location	Call Sign	Location
5AN	Adelaide	5AD	Adelaide
5CL	Adelaide	5DN	Adelaide
5CK	Port Pirie	5KA	Adelaide
5LN	Port Lincoln	5AU	Port Augusta
5MG	Mount Gambier	5MU	Murray Bridge
5MV	Renmark	5PI	Crystal Brook
5PA	Penola	5RM	Renmark
5WM	Woomera	5SE	Mount Gambier

Adelaide's three commercial stations broadcast continuously, while all other stations operated between 121 and 128 hours per week as at June 1968.

Since 1963, the Australian Broadcasting Control Board has made surveys of all metropolitan programmes twice yearly to obtain information as to the general availability of programmes in each city. The programme analysis covers the period of transmission between 7.00 a.m. and 10.30 p.m.

Results of the surveys indicate that commercial stations broadcast mainly light entertainment in contrast to the national stations which, being independent of advertising revenue, provide a much wider variety of programmes.



The distribution of types of programme matter is set out in the following table. Details for South Australia are not separately available but closely approximate those for the Australian distribution.

### Broadcasting Programmes by Categories, Australia 1967-68

#### All Metropolitan Stations

Category	Commercial	National	All Stations
	Per Cent		
Entertainment:			
Drama .....	0.6	3.3	1.5
Light and Popular Music .....	46.7	24.6	39.5
Variety, Talent, etc. ....	2.0	1.6	1.8
Incidental Matter .....	8.8	6.6	8.1
Serious Music and The Arts .....	0.2	25.4	8.4
News .....	9.8	9.1	9.6
Sport .....	6.0	3.9	5.3
Information and General:			
Family .....	2.7	0.6	2.0
Children .....	0.1	3.0	1.1
Information .....	1.7	7.3	3.5
Social and Political .....	3.6	8.2	5.1
Religious .....	3.1	2.5	2.9
Educational .....	(a)	3.9	1.3
Advertising .....	14.7	—	9.9
Total .....	100.0	100.0	100.0

(a) Less than 0.05 per cent.

A person who has both broadcast and television receiving equipment is required to take out a combined licence. Details of broadcast listeners' licences at present in force are given below.

### Broadcast Listeners' Licences<sup>(a)</sup>, South Australia<sup>(b)</sup>

#### Current at 30 June

Type of Licence	1964	1965	1966	1967	1968
Ordinary .....	230,668	231,909	242,412	238,872	249,305
Hirers' and short-term hirers' ...	910	1,138	1,090	966	910
Pensioner .....	32,985	34,303	36,422	36,424	37,607
Other .....	1,464	1,690	1,823	1,807	2,229
Total .....	266,027	269,040	281,747	278,069	290,051

(a) Includes combined licences.

(b) Includes Northern Territory (4,762 licences at 30 June 1968).

**Television**

The State's first television station, NWS Channel 9, a commercial station, began operating on 5 September 1959. It was followed by ADS Channel 7 in October of the same year, and the Australian Broadcasting Commission began operating ABS Channel 2 in March 1960. Of the five remaining stations three became operative in 1965, two of these being country stations relaying programmes from ABS Channel 2, the fourth station, located at Mount Gambier, became operative during 1966 and the fifth, located at Port Pirie, during 1968.

The call signs, channels and location of television stations are given in the following table.

**Television Stations, South Australia**

*At 31 December 1968*

National Stations		Commercial Stations	
Call Sign and Channel	Location	Call Sign and Channel	Location
ABS—2	Adelaide	ADS—7	Adelaide
ABGS—1	Mount Gambier	NWS—9	Adelaide
ABNS—1	Port Pirie	SAS—10	Adelaide
		SES—8	Mount Gambier
		GTS—4	Port Pirie

As the early stations became established their broadcasting time was increased until in December 1963 the two commercial stations were broadcasting in excess of seventy-seven hours per week and the national station sixty-seven hours. Early in 1964 there was a substantial reduction in hours of service but by December 1968 the hours of service for the four Adelaide stations varied between eighty-one and 120 hours per week.

On commercial channels there is a considerable emphasis on drama and light entertainment, whereas the Australian Broadcasting Commission devotes more time to programmes of an informative and educational nature. The Australian Broadcasting Control Board's analysis of television programmes is derived from data obtained directly from commercial and national stations and is calculated on the actual duration of the programmes and not, as formerly, on the scheduled duration as shown in programme journals. The time occupied by advertising is not dissected in the analysis but a separate study of advertising time based on data supplied in audience measurement survey reports carried out in Melbourne provides some indication of the proportion of time occupied by advertisements; in 1967-68 this was estimated at 13.2 per cent of the total televising time of commercial stations.

Results of surveys conducted by the Broadcasting Control Board in 1967-68 indicating the proportions of total broadcasting time (other than advertising) for various types of programmes are given in the following table. Details for South Australia are not separately available but closely approximate those for Australia.

## Television Programmes by Categories, Australia 1967-68

## All Metropolitan Stations

Category	Commercial	National	All Stations
	Per Cent		
Drama:			
Adventure .....	12.4	8.8	11.4
Domestic and Comedy .....	13.4	14.2	13.7
Other .....	25.5	9.8	21.3
Light Entertainment:			
Cartoons .....	5.9	3.4	5.3
Variety .....	3.2	3.9	3.4
Personalities and Oddities .....	8.9	1.4	6.9
Other .....	4.0	1.3	3.3
News .....	4.3	6.3	4.8
Sports .....	6.2	7.2	6.5
Information and General:			
Family .....	2.3	2.1	2.3
Children .....	7.6	7.8	7.7
Information .....	1.5	3.9	2.1
Social and Political .....	2.6	8.5	4.1
Religious .....	1.3	2.0	1.5
Education .....	0.5	18.4	5.1
The Arts .....	0.4	1.0	0.6
Total .....	100.0	100.0	100.0

Details of television viewers licences for the five years ending June 1968 are given below.

Television Viewers Licences<sup>(a)</sup>, South Australia

## Current at 30 June

Class of Licence	1964	1965	1966	1967	1968
Ordinary .....	155,401	167,876	183,007	195,158	203,497
Hirers' and short-term hirers' ...	22,157	21,001	27,349	32,199	35,184
Pensioner .....	16,453	19,122	22,568	24,980	27,487
Other .....	419	643	802	2,167	2,427
Total .....	194,430	208,642	233,726	254,504	268,595

(a) Includes combined (broadcast and television) licences.

## THE PRESS

The State's first newspaper, *The South Australian Gazette & Colonial Register*, was first printed in London in 1836, six months before colonisation. The second issue of this paper, which served both as the official government publication and as an unofficial reporter of the news, was produced in Adelaide twelve months later. *The South Australian Government Gazette* emerged as a separate organ in 1839 and the newspaper continued as *The Register*. In 1850 *The Register* became the first continuous daily paper.

In the next twenty years several more daily newspapers were introduced, and for many years there were two morning and two evening papers daily. However, in the last forty years the present system of three major newspapers—one morning daily, one evening daily and one weekend publication—has emerged.

*The Advertiser*, published each morning except Sunday, was first issued in 1858 as *The South Australian Advertiser*. It absorbed *The Register* in 1931. It is now distributed throughout the State, with about one third of its circulation in country districts.

*The News*, published each evening except Sunday, was introduced in 1923. It replaced two evening newspapers, *The Express & Telegraph* and *The Journal* which traced back their origins to the 1860s. Almost 80 per cent of sales of *The News* are in Adelaide and suburbs.

*The Sunday Mail*, printed on Saturday evenings and distributed mainly on Sunday mornings, first appeared under this name in 1955 following a merger between *The Mail*, first printed in 1912 and the *Sunday Advertiser*, which was introduced in 1953. About 35 per cent of sales of the *Sunday Mail* are in country districts.

In addition *The Chronicle* and the *Stock Journal* are published weekly. *The Chronicle*, established as a country newspaper in 1858, has the largest circulation (nearly 25,000) of any weekly agricultural newspaper in South Australia. The *Stock Journal*, previously the *Adelaide Stock and Station Journal*, established in 1904 and initially directed towards country distribution, now has a circulation of approximately 20,000 mostly by direct annual subscription, a significant proportion of which is metropolitan circulation with agricultural interests.

To support these major State-wide newspapers, a strong provincial press has been built up. There are at present thirty-five country newspapers operating in the State with a combined circulation of over 100,000. Most of these are published weekly, although two appear bi-weekly and three tri-weekly. Of those still existing, *The Border Watch* (Mount Gambier) in 1861 and *The Bunyip* (Gawler) in 1863 were the first to appear. Earlier publications are, however, recorded; *The Port Lincoln Herald* for example was being printed in the early 1840s.

There are also district papers containing items of local interest circulated in a number of suburbs of Adelaide.

## PARKS AND GARDENS

### The Adelaide Botanic Garden

The Adelaide Botanic Garden is situated in parklands east of the Royal Adelaide Hospital with the main entrance off North Terrace.

The Garden, occupying about 45 acres, was established in 1855 and many of the original plantings are still flourishing. An area of about 75 acres north of the Garden was acquired in 1874 and this area, known as Botanic Park, has been developed as an arboretum.

Since 1860 powers of management have been vested in a Board of Governors of eight members who serve for a period of four years but who may be re-elected for further terms.

The Garden contains an extensive collection of about 5,000 species of plants mainly of tropical and subtropical origin. Important features are the collections of native plants for dryland regions, cacti and succulents, the glass ground, glass house displays and the Wisteria arbor. The Museum of Economic Botany, opened in 1879, houses a comprehensive carpological collection and displays of plant products.

In 1954 the State Herbarium was re-established within the Botanic Garden Department and a new herbarium building was completed and occupied in 1965. At present it contains about 250,000 specimens.

State-wide advisory services are available on all matters relating to ornamental horticulture. Experimental tree plantations have been established at Giles Corner, Kulpara, Lameroo, Stansbury and Meningie.

Mount Lofty Botanic Garden of approximately 200 acres was established in 1960 and is expected to be opened to the public in the mid-1970s.

### **The Zoological Gardens**

The Royal Zoological Society of South Australia was founded in 1878, and in 1883 approximately 19 acres of Botanic Park were granted to the society for the establishment of the Zoological Gardens. At the same time arrangements were made for the various exotic and Australian animals and birds previously housed in the Botanic Garden to be transferred to the Zoological Gardens.

During 1967-68 a total of 115 species and varieties of mammals, including a large collection of marsupials, were exhibited. Of particular interest is a colony of Yellow-footed Rock-Wallabies, the only such colony in any zoological garden in the world. The Zoological Gardens also contain a fine collection of Australian birds, a total of 220 species and varieties of Australian and exotic birds having been exhibited during 1967-68.

The many mammals, reptiles, and birds are displayed in cages and enclosures; the enclosures for some animals are moated yards freely open to public view.

The revenue necessary for maintaining and developing the gardens is obtained through an annual State Government grant, from gate receipts and sundry sources.

During 1967-68 about 352,000 persons visited the Zoological Gardens.

### **National Parks and National Parks Reserves**

The National Parks Act, 1966 provides for the setting aside of certain lands as national parks and for the administration of such areas by the National Parks Commission.

At 30 June 1968 land vested in the National Parks Commission covered 2,710,000 acres and consisted of 45 separate areas.

Two of these areas, Belair National Park and Para Wirra National Park are extensively developed with recreational facilities such as tennis courts and ovals, while a third, Cleland National Park, contains a large native fauna reserve which is open to the public.

Limited development only has been permitted in all other parks to this time and they are retained where possible for the protection of native flora, fauna and areas of scenic value.

Late in 1967 an area of approximately 250 square miles, the Elliot Price Wilderness National Park, located in Lake Eyre was brought under the control of the National Parks Commission. Following the acquisition of this land 2,670 square miles of the Simpson Desert was proclaimed as the Simpson Desert National Park early in February 1968. This new national park is more than six times larger than any other in this State.

### National Pleasure Resorts

The South Australian Government has designated twenty-one areas throughout the State as national pleasure resorts to be administered by the Director of the Immigration, Publicity and Tourist Bureau. A number of these areas have been developed while others have been preserved in their natural state.

Some are of historical interest (such as Dingley Dell, near Port MacDonnell and the Old Toll House on the Glen Osmond Road). Others, for public recreation, include Loftia Park in the Mount Lofty Ranges. Four have caravan park facilities.

Others include features of scenic interest, such as Tantanoola Caves in the South East and Wilpena Pound in the Flinders Ranges. There are refreshment kiosk facilities at several, including Mount Lofty Summit, Morialta Falls Reserve and Waterfall Gully, all in the hills near Adelaide, and accommodation, including a modern motel unit has been provided for tourists at Wilpena Pound.

### Municipal Parks and Gardens

The City of Adelaide is surrounded by 1,700 acres of parklands, considerable areas of which are devoted to sporting grounds and recreational facilities. In recent years intensive development of garden areas has been carried out and at 30 June 1968 there were 340 acres of gardens. Plantings during the year 1967-68 included 915 trees and 659 shrubs.

Most suburban and country local government authorities maintain parks and gardens within their domain.

## SPORTING FACILITIES

### National Fitness Council of South Australia

The National Fitness Movement began in Australia in 1939 when the Commonwealth Government made funds available to each State for the purpose of setting up National Fitness Councils.

The National Fitness Council of South Australia promotes physical fitness generally, conducting training and coaching courses in many games and outdoor activities as well as giving active support to youth and other organisations concerned with physical welfare.

The Council is also responsible for the distribution of funds provided by the State Government for youth organisations to train leaders and develop clubs.

The Council advocates the expansion of recreational facilities and conducts periodic surveys on their availability. Summarised results of recent surveys in the metropolitan area are given in the following table.

**Recreational Facilities<sup>(a)</sup>, Metropolitan Area<sup>(b)</sup>**

Facility	1954	1958	1964
		Acres	
Field sports (c) .....	2,585	2,497	2,065
Children's playgrounds .....	95	87	79
Parks and gardens .....	677	767	630
Other (d) .....	1,718	1,866	2,981
Total .....	5,075	5,217	5,755

(a) School recreational facilities and regional reserves such as National Park and Waterfall Gully are excluded

(b) As defined for Census purposes prior to June 1966.

(c) Includes tennis courts and bowling greens.

(d) Includes race courses, golf courses and areas reserved but undeveloped.

The total of 5,755 acres in 1964 represented approximately 9.5 acres per thousand persons.

### **Sports Grounds**

Adelaide Oval, occupying approximately 15 acres of the north park lands, is leased to the South Australian Cricket Association and is the venue for major cricketing and Australian Rules football events. In June 1969 the Australian National Football Council conducted its carnival at this ground.

In addition there are a number of major suburban ovals where feature cricket and Australian Rules football matches are played. Among the more important of these is Norwood Oval, which is also the main venue for outdoor night sports, especially baseball. Recently the Olympic Sports Field (previously Kensington Oval) has become the State Headquarters for athletics following the laying of a top-class bituminised rubber athletic track, and this arena is also frequently used for soccer matches.

The parklands of the City of Adelaide are used extensively for sporting purposes and during 1967-68 permits were issued for the use of 200 sports grounds (excluding tennis courts).

Sports grounds are distributed throughout suburban Adelaide, at approximately one to two mile intervals, and throughout country areas. In addition sports areas are available at most State and private schools.

### **Race Courses**

There are three registered metropolitan courses: Victoria Park, occupying approximately fifty-eight acres of the east parklands, Cheltenham and Morphettville. In addition there were, at 30 June 1968, fifty-one registered racing clubs and thirty-eight registered country courses. Picnic race meetings are held at a number of outlying centres.

### **Trotting Tracks**

Trotting is conducted at the Royal Agricultural and Horticultural Society showgrounds at Wayville. At 30 June 1969 there were also tracks at 'Globe Derby Park' Bolivar, Gawler and fourteen other centres in country areas. Wayville, Gawler and seven other country tracks have facilities for night trotting.

### **Golf Courses**

At 30 June 1968 there were six suburban public courses including four 18-hole courses and a par-3 links utilising 248 acres of the north-west park lands, and a course at National Park, Belair.

There were also fourteen private courses operating within suburban Adelaide. During early 1968 a new par-3 links was constructed and opened at Semaphore South. In addition there are courses at many country centres.

### **Tennis Courts**

The South Australian Lawn Tennis Association's courts at Memorial Drive, North Adelaide occupy approximately 6 acres of the north park lands. These courts were the venue for Davis Cup matches in 1952, 1956, 1963 and 1968. In 1967-68 the parklands also contained 146 tennis courts. Courts associated with schools, churches and private clubs exist throughout the State.

### **Bowling Greens**

At 30 June 1968 there were 232 bowling clubs registered with the Royal South Australian Bowling Association—sixty-six in and near Adelaide, 162 in country areas, and four at Broken Hill, New South Wales. The size of clubs varied from thirty-five rinks at Bordertown to as few as six rinks, with the two largest



suburban clubs being Holdfast (thirty-three rinks) and Lockleys (thirty-two rinks). In addition in the metropolitan area there are five all-women clubs registered with the South Australian Women's Bowling Association.

### **Swimming Facilities**

At 31 December 1968 there were sixty-eight public swimming pools in South Australia, of which fifty-two were in country centres. Of these only eight country and two metropolitan pools had been in use prior to 1950, recent activity having been stimulated by a State Government subsidy on pool construction. Of the sixty-eight pools, sixty had treated water, the remainder were in lakes, dams, rivers or the sea, or utilised sea water.

Swimming pools are also provided at thirty-two State schools, sixteen of these being in country areas. In addition a further five pools in the planning stage will include the first 25-metre pool in a school. Swimming facilities are also available at a number of private schools. The Education Department encourages school committees to build swimming pools by granting subsidies for their construction.

The City Baths Olympic Pool, opened in 1940, has been the venue for major swimming events including the National Swimming Titles in February 1967; it was permanently closed at the end of the 1968-69 swimming season. The construction of an Olympic pool in the north parklands commenced in April 1969 and it is expected to be in use during the summer of 1969-70.

The nature of Adelaide's foreshore and that of many country beaches, combined with the prevailing climate, provides ideal conditions for open sea summer bathing.

## **LOTTERIES AND BETTING**

### **LOTTERIES**

On 20 November 1965 a referendum was held in South Australia to resolve the question 'Are you in favour of the promotion and conduct of lotteries by the Government of this State?'. Of the 92.5 per cent of enrolled electors who voted, 65.7 per cent voted in favour of the question, 27.1 per cent were not in favour and 7.2 per cent recorded informal votes.

Subsequently in August 1966 a Bill was introduced into the House of Assembly to give effect to the 'Yes' vote recorded at the referendum. The State Lottery Act, 1966 provides for the promotion and control of lotteries by the Government of the State. In November 1966 a Lotteries Commission, consisting of a chairman and two other members, was appointed to administer the Act which came into operation by proclamation issued on 8 December 1966. The first draw was made in May 1967.

In accordance with Section 16 of the Act all moneys received by the Commission are paid into a Lotteries Fund from which moneys are made available for meeting the expenses of the Commission and paying prizes. The balance of the Lotteries Fund which represents the surplus of income over expenditure and prize moneys not claimed for over six months is from time to time, as required by the Treasurer, transferred to a Hospitals Fund. Up to 31 December 1968 approximately \$2.6 million had been transferred to the Fund.

Originally, only one lottery, a 50 cent series was conducted but in July 1967 a Jackpot series was introduced. In August 1968 a special lottery with tickets at \$2 each was promoted as the Anniversary Special No. 1; it closed fully subscribed with the sale of 100,000 tickets in fifteen working days. A second special lottery was conducted in February 1969. A further special lottery, the 1969 Football Carnival Special with 100,000 tickets at \$3 each opened in May 1969 and was fully subscribed within twelve working days.

The Commission operates an account service by accepting deposits from persons wishing to invest in each lottery without the need to purchase tickets themselves. At 31 December 1968, 758 subscribers availed themselves of this service.

Because of the high degree of mechanisation employed, the Commission is able to produce a result slip within four hours of a lottery being drawn.

At 31 December 1968 there were 265 Lotteries Commission Agents appointed in South Australia. Of these 155 were in the Adelaide and suburban area; sixty-six in country areas and forty-four were subscriber (non-ticket selling) agents.

### BETTING

Legalised betting in South Australia is governed by the provisions of the Lottery and Gaming Act, 1936-1969 and is restricted to horse racing, trotting and coursing events with betting on coursing events confined to 'open' and 'enclosed' meetings for the coursing of live hares. Betting on 'speed' coursing—or dog racing—is not at present sanctioned.

Prior to December 1933 legalised betting was restricted to totalisator betting at registered race meetings; from 1933 until 1967 it was limited to 'on-course' totalisators and with bookmakers who were licensed to bet on courses where meetings were held, and from January 1934 to February 1942 with bookmakers who were also licensed to bet 'off-course' in specially registered premises in both metropolitan and country areas.

As a war-time measure, horse racing in South Australia was banned from March 1942 until October 1943, and off-course betting facilities were not re-established until 1946 when they were restricted to country areas. At present Port Pirie is the only town where bookmakers now operate in registered premises.

However, in October 1966, an amendment to the Lottery and Gaming Act, 1936-1966 made provision for the setting up of a totalisator agency system of off-course betting in South Australia.

A board consisting of a chairman and seven other members representative of racing and trotting interests was appointed to administer the new system and Totalisator Agency Board (TAB) headquarters were established in Adelaide during December 1966. The TAB first operated on 29 March 1967 on a country race meeting whilst it operated for the first time on a metropolitan meeting on 1 April 1967.

In its first eighteen months of operation the number of agencies in South Australia has grown from fourteen to seventy-seven. Further premises in the city, suburbs and country towns are being established progressively to provide a complete coverage of the whole State. In addition a system of telephone betting is available to persons who have established accounts with the TAB. At 30 June 1968 the Board employed 117 permanent officers and 441 part-time staff.

Off-course investments totalled \$15,497,356 and the following amounts became payable to the South Australian Government from the operations of the Board in the year ended 30 June 1968:

	\$
Stamp duty . . . . .	813,614
Fractions . . . . .	139,056
Unclaimed dividends . . . . .	47,171
Commission on N.S.W. investments . . . . .	581
	<hr/>
	1,000,422
	<hr/>

During the year stamp duty amounting to \$642,240 was received into the Hospitals Fund at the State Treasury from the T.A.B. In addition, for the year ended 30 June 1968, an amount of \$321,222 became available for distribution to racing and trotting clubs under a scheme of distribution prepared by the Board and approved by the Chief Secretary.

## 6.5 HEALTH

### HISTORICAL

The first Health Act in South Australia was passed in 1873. This Act, which was modelled on earlier English legislation, established a Central Board of Health, and a number of town councils were constituted as local boards. Regulations were mainly concerned with improved sanitation and the checking of 'epidemic, endemic and contagious diseases'. Amendments to this Act followed in 1876 and 1884, and a fourth Act, replacing earlier legislation, was passed in 1898. The present Health Act dates from 1935.

Administration was continued under the authority of the Central Board of Health until 1949 when the Department of Public Health was formed to co-ordinate the work of the board and other health activities.

The first hospital in South Australia was built in 1837. It was a small thatched hut situated on North Terrace near Holy Trinity Church and measured 18 feet by 12 feet. The foundation stone of the first Adelaide Hospital was laid in 1840. This building, which was eventually demolished in 1938, contained two 12-bed wards and four smaller rooms. The first buildings of the present Royal Adelaide Hospital were erected in 1856-57.

Hospitals in the country were established at Mount Gambier in 1869, Wallaroo and Port Lincoln in 1870, Port Augusta in 1875, and Port Pirie in 1890. The Port Adelaide Casualty Hospital was erected in 1882.

The State's first mental hospital, now demolished, was situated in Botanic Park. The Parkside Psychiatric Hospital (now Glenside Hospital) commenced operation in 1870 under the control of the Colonial Surgeon. The Enfield Receiving House and the Northfield Mental Hospital (now Hillcrest Hospital) were established in 1922 and 1929 respectively.

### ADMINISTRATION

The administration of health in South Australia is principally under the control of three main authorities: the Department of Public Health, the Hospitals Department and the Commonwealth Health Department. Broadly their activities cover different fields as follows: the Department of Public Health concentrating on general health matters including the prevention of disease, the Hospitals Department on hospitalisation, and the Commonwealth Health Department on health on a national basis including national health services and quarantine.

The Department of Public Health embraces the activities of the Central Board of Health, the School Health Branch (including the Deafness Guidance Clinic), the Epidemiology Branch, the Food and Drugs Advisory Committee, the Radiological Advisory Committee, the Clean Air Committee, and also the public health aspects of the control of tuberculosis, including the Chest Clinic and the State X-ray health surveys.

The Central Board of Health administers the Health, Food and Drugs, Dangerous Drugs, Noxious Trades and Bakehouse Registration Acts. The Board also has responsibilities under the Local Government Act and the Cremation Act.

The Health Act and the Food and Drugs Act constitute every municipal or district council a local board of health or local authority for its area, except that in the metropolitan area, the Metropolitan County Board (representing twenty metropolitan corporations) is the local authority under the Food and Drugs Act. The Central Board of Health acts as a supervisory body over all the 138 local boards under the Health Act, the Food and Drugs Act and the Bakehouse Registration Act. It has concurrent jurisdiction with local boards. Outside the boundaries of local boards the Central Board is the administering authority.

The Hospitals Department administers government hospitals and supervises the work of government subsidised hospitals in South Australia.

Other State authorities concerned with aspects of public health include the Engineering and Water Supply Department which is responsible for water supply and sewerage services, and the Metropolitan and Export Abattoirs Board responsible for the functioning of the metropolitan abattoirs and for the inspection of premises used for merchandising, storing or processing of meat.

Under the Health and Medical Services Act, 1949, the Advisory Council on Health and Medical Services was constituted to investigate and report on matters referred to it by the Minister of Health. The matters may relate to any question concerning health, hospitals, medical services, the training and employment of any class of persons whose work relates to the promotion of health or to the treatment of disease or abnormality of the human body, and any proposals for new legislation relating to any of these matters.

The work of the Commonwealth Department of Health includes the administration of the national health services, including medical, hospital, pharmaceutical and pensioner benefits. Under the *Quarantine Act* 1908-1969 the Department is responsible for the various aspects of human, animal and plant quarantine. Persons ordered into quarantine are accommodated at the Torrens Island Quarantine Station.

The South Australian Branch of the Repatriation Department administers the medical services provided for ex-service personnel whose disabilities are accepted as being due to war service.

### GENERAL HOSPITAL SERVICES

The control of hospitals in South Australia is vested in several authorities including the Hospitals Department, the Repatriation Department, religious and charitable organisations, local community committees and private owners.

### PUBLIC HOSPITALS

The Hospitals Department administers three hospitals in the metropolitan area: Royal Adelaide Hospital, The Queen Elizabeth Hospital, and Morris Hospital (Tuberculosis only). Work was begun in February 1968 on site preparation for the construction of a further general hospital in the north-eastern suburb of Modbury; 236 beds will be provided in the first stage which is expected to be completed in 1971. In the country there are government hospitals at Port Pirie, Mount Gambier, Port Lincoln, Port Augusta, Wallaroo and Barmera. Legislation passed early in 1969 provided for the Department to assume control of the Whyalla Hospital. In addition there are fifty-seven other hospitals in country areas, conducted by local boards of management, which receive maintenance subsidies from the State Government and come under the general supervision of the Hospitals Department.

Public General Hospitals<sup>(a)</sup>, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Hospitals .....	65	65	67	65	65
Staff (at end of year):					
Medical;					
Honorary .....	626	657	684	671	667
Permanent .....	248	283	300	300	346
Nursing .....	3,387	3,490	3,727	3,996	4,549
Attendants and others .....	3,423	3,478	3,587	3,865	4,003
Patients:					
Admitted and re-admitted ....	96,471	101,918	107,984	114,179	119,451
Average daily number resident:					
Males .....	1,362	1,410	1,491	1,489	1,540
Females .....	1,643	1,705	1,804	1,874	1,895
	\$'000				
Revenue:					
State Government aid .....	12,094	14,171	19,681	22,138	16,626
Commonwealth (b) .....	2,098	2,083	2,097	2,933	3,519
Fees .....	4,908	5,592	6,205	7,159	8,156
Other .....	2,066	2,238	2,403	2,302	2,738
Total .....	21,166	24,084	30,386	34,532	31,039
Expenditure:					
Salaries .....	11,001	12,763	13,807	15,573	17,661
Maintenance, etc. ....	5,424	6,040	7,250	8,143	8,890
Buildings;					
New .....	4,646	4,871	9,617	9,131	3,403
Repairs .....	1,061	1,103	1,142	1,291	1,167
Total .....	22,132	24,777	31,816	34,138	31,121

(a) Public hospitals comprise those operated and maintained by State Government or semi-government authorities and those which receive a conditional subsidy or a regular grant from the State Government for maintenance purposes, but exclude those which receive *only* Commonwealth hospital benefits.

(b) Hospital, pharmaceutical and tuberculosis benefits.

Public General Hospitals<sup>(a)</sup>, South Australia, 1967-68

Particulars	Royal Adelaide Hospital	Queen Elizabeth Hospital	Adelaide Childrens Hospital	Other General Hospitals	Total
Staff (at end of year):					
Medical;					
Honorary .....	255	105	—	205	565
Permanent .....	160	98	53	25	336
Nursing .....	1,548	636	583	1,782	4,549
Attendants and others .....	1,434	642	580	1,347	4,003
Patients:					
Admitted and re-admitted ....	23,558	16,510	13,397	65,986	119,451
Average daily number resident	1,010	429	276	1,720	3,435

(a) Public hospitals comprise those operated and maintained by State Government or semi-government authorities and those which receive a conditional subsidy or a regular grant from the State Government for maintenance purposes but exclude those which receive *only* Commonwealth hospital benefits.

**Royal Adelaide Hospital**

The Royal Adelaide Hospital, a general and casualty hospital for adults, is controlled by a board of three members, with the Director-General of Medical Services as chairman. The hospital, which incorporates a department of dentistry, is a university teaching hospital. Charges are made for in-patient treatment, and patients requiring out-patient treatment at the various clinics are subject to a means test as to eligibility. A major redevelopment of the Hospital which is nearing completion will result in an additional 300 beds and expanded investigational and treatment services.

In addition to the main hospital there are wards at Magill and Northfield. A section of the Northfield wards is used for infectious diseases cases, and a section of the Morris Hospital, Northfield is occupied by the Paraplegic Unit.

At 30 June 1968 there were 1,239 beds at the hospital including 93 in the infectious diseases wards at Northfield.

**The Queen Elizabeth Hospital**

The Queen Elizabeth Hospital at Woodville, a general and casualty and maternity hospital controlled by a board of three members, is a university teaching hospital, opening in 1954 with the completion of a temporary section. Permanent blocks followed in 1957 and 1959. Building extensions and additions to provide for an additional 270 beds were commenced in June 1968 and are expected to be completed in September 1971.

In 1960 the hospital took over the 'Mareeba' babies hospital as its paediatric department.

At 30 June 1968 there were 531 beds at The Queen Elizabeth Hospital.

**Queen Victoria Hospital**

The Queen Victoria Hospital was founded by public subscription, opening in 1902. It primarily provides facilities for the medical care of women in pregnancy and childbirth and is a university teaching hospital.

Controlled by a committee of management the hospital is financially dependent on State Government aid. In 1967-68 State aid constituted 60 per cent and fees from patients 32 per cent of the revenue received for maintenance purposes.

Accommodation at 30 June 1968 was 148 beds.

**Adelaide Childrens Hospital**

The Adelaide Childrens Hospital was founded by public subscription in 1876 and the first patient admitted in 1879. It is controlled by a board of management and supported by State Government grants, public subscriptions and fees. In 1967-68 the hospital received 63 per cent of its revenue in the form of State Government Grants.

Children fourteen years and under may receive in-patient and out-patient treatment; however, eligibility for out-patient treatment is subject to a means test. The hospital provides a training school for nurses and nurse aides and instruction for medical students. The University of Adelaide Department of Child Health is situated at the hospital.

The history of the hospital has been marked by continued expansion, the most recent addition being a new nurses home and training school completed in October 1968. There were 430 beds at the hospital at 30 June 1968.

## HOSPITALS FOR TUBERCULOSIS

The State Government conducts a chest clinic and a tuberculosis hospital in the metropolitan area. At the chest clinic patients are examined and treated, suspected cases are investigated and contacts are advised of precautionary measures and periodically re-examined. The Morris Hospital, Northfield, which at 30 June 1968 had twenty-eight beds, cared for tuberculosis patients received from the chest clinic until the end of October 1968, but now all such patients are sent to Kalyra Sanatorium.

The Kalyra Sanatorium at Belair is conducted by the James Brown Memorial Trust Inc. for tuberculosis sufferers. At 30 June 1968 there were seventy-two beds at the Sanatorium.

## REPATRIATION HOSPITALS

The Repatriation Department maintains two hospitals in South Australia—the Repatriation General Hospital at Daw Park and the Repatriation Hospital 'Birralee' at Belair.

The Daw Park hospital was a military hospital during the 1939-45 War, coming under the control of the Department in 1947. Medical and surgical in-patient treatment is provided for eligible ex-service personnel, eligible dependants and serving members of the forces. The average daily number of patients in the Hospital during 1967-68 was 302 and the staff at the end of the year totalled 577. Facilities for the treatment of out-patients were completed in May 1968 replacing those formerly located at Keswick.

The auxiliary hospital, 'Birralee', at Belair caters for some general medical patients and has a section for the treatment of tuberculosis patients. The average occupancy during 1967-68 was thirty.

Details of the number of patients treated at Daw Park and Belair are given on page 247.

## PRIVATE HOSPITALS

Details of all private institutions approved for payment of Commonwealth hospital or nursing home benefits are given in the following table.

Private Hospitals and Nursing Homes, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Number of private hospitals and nursing homes .....	165	179	180	187	188
Number of beds at end of year..	3,983	4,280	4,419	4,717	4,898

There are several large private hospitals in the metropolitan area including Calvary Hospital, the Memorial Hospital and St Andrew's Presbyterian Hospital, all of which are run by denominational bodies. Another large institution is the Home for Incurables at Fullarton which provides accommodation and nursing attention for persons suffering from chronic disease.



### MENTAL HEALTH SERVICES

The Mental Health Services, a division of the Hospitals Department, is responsible for the management of public psychiatric services.

Glenside Hospital, situated on a site of approximately 130 acres, had accommodation for 1,154 patients at 30 June 1968.

Hillcrest Hospital, Northfield, had accommodation for 875 patients including two repatriation wards of fifty-eight beds and a ward of fifty beds for the treatment of alcoholic patients.

These two hospitals provide for admission and treatment on a 'short-term' basis, but in the main provide for the accommodation and treatment of 'long-term' patients, most of whom have been transferred from the receiving institutions.

The two receiving institutions, the Enfield Receiving House (88 beds) and the receiving section at Glenside (113 beds) are 'short-term' establishments where treatment is directed towards early discharge. Generally, duration of stay in a receiving house is a few months terminating in either transfer to one of the 'long-term' institutions or in discharge. In the following table, which covers the four institutions, particulars relate only to in-patients.

#### Psychiatric Hospitals, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
<b>Staff:</b>					
Medical .....	28	32	30	27	27
Nursing and attendants .....	652	668	686	718	701
<b>Patients:</b>					
Admitted and re-admitted (a)					
Certified .....	901	782	642	671	685
Voluntary .....	2,231	2,279	2,168	2,195	2,048
Remaining end of year					
Certified .....	2,146	1,957	1,789	1,574	1,475
Voluntary .....	692	795	857	923	990
	\$'000				
<b>Revenue:</b>					
Commonwealth benefits .....	113	111	122	158	186
Fees, etc. ....	225	242	256	254	250
Net cost met by State Government .....	3,636	3,916	4,297	4,309	4,798
<b>Total .....</b>	<b>3,974</b>	<b>4,269</b>	<b>4,675</b>	<b>4,721</b>	<b>5,234</b>
<b>Expenditure:</b>					
Salaries .....	2,017	2,372	2,583	2,814	3,062
Maintenance, etc. ....	1,250	1,330	1,393	1,453	1,652
<b>Buildings:</b>					
New .....	349	165	321	102	168
Repairs .....	358	402	377	352	352
<b>Total .....</b>	<b>3,974</b>	<b>4,269</b>	<b>4,675</b>	<b>4,721</b>	<b>5,234</b>

(a) Direct admissions and re-admissions only. Excludes inter-institutional transfers.

The fall over the period in admissions of certified patients and in the number of such patients remaining at the end of the year is a reflection of new more effective treatment methods and advances in the understanding of mental

health problems with a resultant shift in emphasis to treatment at out-patient clinics, the receiving house, a day hospital, child guidance clinics, a clinic for the intellectually retarded and a community mental health service. The number of patients who received treatment during 1967-68 at the non-residential public clinics and services was as follows: out-patient clinics, 2,697; day hospital, 286; child guidance clinics, 967; intellectually retarded clinic, 249; community mental health service, 294.

## MATERNAL AND CHILD WELFARE

### MATERNITY HOSPITALS

In addition to the Queen Elizabeth Hospital and the Queen Victoria Hospital, there were fourteen private hospitals in the suburbs and five government and seventy subsidised and private hospitals in country areas which at the end of 1968 were licensed to operate as maternity hospitals.

### MOTHERS AND BABIES HEALTH ASSOCIATION

The Mothers and Babies' Health Association (M.B.H.A.) was established in 1909. This voluntary body, supported by government subsidy and public subscriptions, conducts maternal and infant welfare work throughout the State. At 278 regular centres, Association sisters give advice on the management of babies and infants.

Mothers in sparsely settled areas not served by the centres are given regular advice by correspondence. The Association holds classes for expectant mothers and provides for educational lectures to school children.

The Association's mothercraft hospital, Torrens House, in addition to providing accommodation for mothers and infants, serves as a training school for infant welfare and mothercraft courses.

In conjunction with the Department of Public Health, the M.B.H.A. are now working on the introduction of the pre-school examination scheme to the whole of the State.

### SCHOOL HEALTH SERVICES

Medical services were first introduced into schools in 1913. Since 1951 all school health services have been the responsibility of a branch of the Department of Public Health.

State and private schools within a radius of 60 miles from Adelaide, and at six large country centres are visited annually. Pupils in Grades 1 and 7 in primary schools and in third year in secondary schools are medically examined by doctor and sister. In addition the vision and hearing only, of children in Grade 4 and in fifth year at secondary schools are tested by nursing sister. The remaining country schools are visited at approximately three yearly intervals when all the children are examined.

During 1968, 97,880 children were examined by medical officers in 207 metropolitan and 243 country schools. Of these 5,720 required treatment for defective vision, 3,419 for defective hearing and 10,347 for dental disorders. Where defects are found, the parents are notified and advised to obtain treatment.

Dentists using mobile vans examined 3,744 children in 1968. Children offered treatment numbered 3,088 of which 2,878 accepted. All treatment offered is free of charge.

During 1968, 1,246 children attending the schools from which the dental training school draws its requirements were offered treatment and 978 accepted. Of these 864 have so far attended the training school for examination and treatment. All treatment offered is free of charge.

There were 2,962 children examined at the Deafness Guidance Clinic including 1,557 examined for the first time in 1968; 667 of those first examined in 1968 were referred to doctors or hospitals for treatment.

The staff of the School Health Branch at the beginning of 1969 included eleven medical officers, ten nurses, nine dental officers, seven dental assistants, three otologists (two part-time), and three audiometrists.

### COMMUNICABLE DISEASES

Under the Health Act, 1935-1968, certain diseases have been designated as 'infectious' and others as 'notifiable'. It is required that cases of infectious and notifiable diseases be reported to the local board of health, which in turn advises the Central Board of Health, and that cases of tuberculosis and venereal disease be notified directly to the Central Board.

Communicable Diseases: Cases Notified, South Australia

Disease	1964	1965	1966	1967	1968
Acute rheumatism .....	—	1	8	—	1
Diarrhoea, infantile .....	12	13	2	12	10
Diphtheria .....	—	1	—	—	—
Dysentery, bacillary .....	73	178	135	92	204
Encephalitis .....	3	6	9	20	5
Infective hepatitis .....	289	414	978	1,299	558
Malaria .....	—	3	1	1	4
Meningococcal infection .....	5	4	6	5	11
Paratyphoid .....	1	3	—	—	—
Poliomyelitis .....	—	—	—	—	—
Rubella .....	664	649	226	969	442
Salmonella infection .....	120	127	120	110	240
Scarlet fever .....	202	127	57	60	44
Tetanus .....	—	6	—	1	—
Trachoma .....	42	—	1	—	—
Tuberculosis .....	177	156	131	141	110
Typhoid fever .....	4	1	1	1	13
Other diseases .....	13	16	272	447	561

Venereal diseases became notifiable in South Australia from November 1965; prior to this the Director-General of Public Health was empowered to compel a venereal disease suspect to submit to medical examination and treatment. The Department of Public Health maintains a venereal diseases investigation clinic at the Royal Adelaide Hospital. There were 497 cases of gonorrhoea and 51 of syphilis notified during 1968; these are included in 'other diseases' in the preceding table.

### Anti-Tuberculosis Campaign

Since March 1952 compulsory X-ray surveys of the population have been conducted in South Australia. With the advent of mobile survey units using miniature radiography it has been possible to X-ray all persons aged twenty-one years and over every three or four years. Where necessary persons are subsequently referred to their medical practitioner.

Children in Grade 1 at all State and certain private schools in the metropolitan area are given a tuberculin test. A further test is made at Grade 7 level and where appropriate the children are vaccinated.

Other references appear on pages 226 and 245.

### **Poliomyelitis Services**

Following the development of Salk vaccine, a poliomyelitis immunisation programme began in 1956.

All injections were given by the Poliomyelitis Services until 1961 when the vaccine became available to other authorities. In 1964 the vaccine was released for use by private medical practitioners.

Up to the end of 1968, 693,836 first injections, 679,547 second injections, 611,515 third injections and 247,270 fourth injections had been given.

Oral (Sabin) vaccine was first introduced in July 1967 and will eventually almost completely replace the use of Salk vaccine. During 1968, 11,092 injections of Salk vaccine and 114,352 doses of Sabin vaccine were given.

The programme has corresponded with a dramatic decline in the incidence of poliomyelitis, as illustrated by the table.

**Poliomyelitis, South Australia**

Year	Cases Notified	Deaths
1950 .....	973	17
1951 .....	1,491	61
1952 .....	709	12
1953 .....	398	22
1954 .....	176	5
1955 .....	182	6
1956 .....	122	3
1957 .....	16	1
1958 .....	10	1
1959 .....	1	—
1960 .....	12	—
1961 .....	44	2
1962 .....	19	2
1963 .....	7	1
1964-68 .....	—	—

There were no cases reported in the years 1964 to 1968.

### **OTHER HEALTH SERVICES**

#### **Blood Transfusion Service**

The Red Cross Blood Transfusion Service collects and classifies blood for the daily needs of hospitals and to meet emergencies. During 1968 donors gave over 56,000 individual donations either at the Service's centre or at a mobile unit visiting metropolitan and country centres.

The Service maintains a blood bank at the Royal Adelaide Hospital, and a reference laboratory which, in addition to classifying donors' blood, performs investigations for hospitals and medical practitioners. There is a subsidiary blood bank at the Queen Elizabeth Hospital, and during 1967 blood transfusion centres were established at Mount Gambier and Whyalla.

The cost of maintaining the Blood Transfusion Service is met by the State Government (60 per cent), the Commonwealth Government (30 per cent) and the Red Cross Society (10 per cent).

### **Home Nursing**

The Royal District and Bush Nursing Society of South Australia, through its thirty-three branches in metropolitan and country districts, provides nursing facilities to those in need of home nursing. The services of the fully trained nursing staff are provided free of charge to those unable to afford a fee, and to others according to their means. During 1967-68 a total of 146,821 visits were made by forty-eight full-time nurses.

The Society also maintains a hospital at Marree and a medical centre at Iron Knob.

The Society obtains its revenue from State and Commonwealth aid (49 per cent of total revenue in 1967-68), fees from patients (19 per cent), and legacies, donations, local government aid and other sources (32 per cent).

### **Royal Flying Doctor Service**

People living in outback areas may receive medical and dental attention through the Flying Doctor Service. Aeroplanes with doctors and pilots are operated from control centres at Port Augusta and Alice Springs maintained by the Royal Flying Doctor Service of Australia (S.A. Section) Inc. Clinics are held at not more than monthly intervals at the hospitals conducted by the Australian Inland Mission at Andamooka and Oodnadatta, The Bush Church Aid Society at Cook and Coober Pedy, the Royal District and Bush Nursing Society at Marree, and the native missions at Yalata and Coorabie.

Outposts with transceiver sets may consult the doctor by contacting the control centre, and the doctor may diagnose and prescribe over the air or may be flown to give direct medical treatment. The radio facilities of the Royal Flying Doctor Service are also used by the School of the Air, various community organisations and for relaying of messages in the form of telegrams, in conjunction with the Postmaster-General's Department.

### **Ambulance Services**

The St John Council for South Australia Inc. is responsible for providing a full-time ambulance service for the metropolitan area. This service is manned and operated by the St John Ambulance Brigade which also assists in ambulance operation in most country areas. In the metropolitan area during 1968 the Brigade's ambulances travelled a distance of 711,818 miles and carried 97,740 patients. Sixty country ambulance services throughout the State are affiliated with the St John Council, and a state wide base and mobile radio communication system operates on a standard frequency. Ambulances and equipment are interchangeable, and a statewide programme of training based on a Manual of Ambulance Transport Nursing published by the St John organisation in Adelaide is the basis for common training programmes.

### **Voluntary Agencies**

There are many other voluntary bodies operating in South Australia and doing health work of a special nature. Their activities cover such fields as care of the handicapped, hospital services, care of mother and baby, care of the aged and the provision of convalescent facilities.

## **CREMATORIUMS AND CEMETERIES**

The first crematorium in South Australia, the Adelaide Crematorium, was erected by the Cremation Society of South Australia and presented to the State Government in 1903. It was closed in November 1959.

Cremations are currently conducted at the Centennial Park Crematorium which was erected in 1956 and is operated by the Centennial Park Cemetery Trust. There were 2,476 cremations in 1968. A crematorium under construction by the Enfield General Cemetery Trust is expected to be in use by late 1969.

Cemeteries in South Australia are divided into three main groups: those under the control of the State Government or local government authorities, those under church control and those under the control of trusts.

In each of the above groups the cemeteries are financed by the usual charges for burials and by the leasing of land for burial purposes. With church and trust cemeteries, the cost of maintenance is often derived from interest accruing from invested capital funds.

### STATE GOVERNMENT EXPENDITURE ON PUBLIC HEALTH

The following table shows the net expenditure by the State Government from Consolidated Revenue Account on various aspects of public health which is defined as excluding sewerage, drainage and water supply. The content of figures in some lines of the table is not strictly comparable from year to year because of changes in the pattern of expenditures from various Government funds, for example, expenditures met from Loan Fund or Hospitals Fund instead of from Consolidated Revenue Account. Subject to these qualifications the figures include both the cost of maintaining State Government activities and subsidies paid to semi-government and private organisations active in this field.

**Net Expenditure on Public Health, South Australia<sup>(a)</sup>**

Category	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Care of sick and mentally afflicted:					
Government general hospitals .	9,273	10,572	11,918	13,157	12,413
Subsidies to:					
General hospitals (including Adelaide Childrens Hospital) .....	4,470	4,736	5,799	3,789	3,994
Other .....	294	322	321	316	333
Mental hospitals .....	3,588	4,114	4,401	4,719	5,199
Institutions for mentally deficient children .....	88	236	210	217	233
Health of mothers and children:					
Baby health centres .....	215	239	231	256	261
Maternity homes .....	248	823	1,632	516	664
Medical and dental examination of school children .....	222	240	263	270	321
Preservation of public health: (including Public Health Department and administration of Health Acts) .....	540	591	609	663	735
<b>Total .....</b>	<b>18,938</b>	<b>21,875</b>	<b>25,384</b>	<b>23,904</b>	<b>24,153</b>

(a) From Consolidated Revenue Account only.

### MEDICAL PERSONNEL

The following table lists registrations with the Medical, Dental, Pharmaceutical, Physiotherapy, and Nurses Boards of South Australia, and with the Board of Optical Registration.

The figures for registered medical practitioners show the number of persons registered to practise medicine in South Australia and not the number actually practising, which is estimated at approximately two-thirds of those registered.

### Professional Medical Personnel, South Australia

*Number Registered at 31 December*

Profession	1964	1965	1966	1967	1968
Medical practitioners (a) .....	2,002	2,080	2,175	2,282	2,372
Dentists .....	311	312	311	313	304
Pharmaceutical chemists .....	758	783	836	883	836
Opticians .....	93	89	91	91	93
Nurses (b) .....	7,255	7,699	8,065	8,467	8,832
Nurse aides .....	357	466	684	822	1,048
Midwives .....	3,136	3,272	3,353	3,483	3,565
Mental nurses .....	308	(c) 285	(c) 34	(c) —	(c) —
Psychiatric nurses .....	—	(c) 76	(c) 419	515	588
Mental deficiency nurses .....	—	(c) 17	(c) 361	404	433
Infant welfare nurses (d) .....	454	484	503	525	565
Infectious diseases nurses .....	36	34	36	36	37
Physiotherapists .....	463	492	467	405	423

(a) Includes personnel not practising in South Australia.

(b) Nurses may also be registered and included as midwives, psychiatric nurses, mental deficiency nurses, etc.

(c) Affected by change in registration provisions.

(d) Includes mothercraft nurses.

Over the past twenty years there has been a considerable re-organisation of general practice in medicine with a movement away from single practices to partnership and group practice arrangements.

## MEDICAL RESEARCH

### The Institute of Medical and Veterinary Science

Details of this organisation are given under the heading of Scientific Organisations on pages 193-4.

### The Anti-Cancer Foundation

The forerunner of the Foundation, the Anti-Cancer Campaign Committee, was formed within the University of Adelaide in 1928. The Committee's early activities were largely devoted to establishing and developing the Radiotherapy Department of the Royal Adelaide Hospital. As demand for these facilities grew the hospital assumed responsibility for routine treatment, and the Committee concentrated its activities on research. In 1962 the Committee was re-organised and became the Anti-Cancer Foundation of the University of Adelaide.

Early research was of a clinical nature, but more recently the Committee and the Foundation have subsidised research projects within the Institute of Medical and Veterinary Science and the various departments of the University.

A public education programme has been conducted to encourage sufferers to seek early treatment and the Foundation has established well-equipped self-contained flats to accommodate country patients receiving treatment at the Royal

Adelaide Hospital. In addition to treatment financial assistance is provided for families where necessary.

The income of the Foundation is derived from gifts and bequests, government grants and subsidies, and from direct public appeals.

### **The National Heart Foundation**

The National Heart Foundation of Australia, together with its South Australian Division, was established in February 1959. The National Heart campaign of 1961 raised \$5,124,000 for the work of the Foundation, of which \$662,000 was contributed in South Australia. An appeal for further funds was opened in May 1969.

The campaign funds are being spent on research (70 per cent), education (15 per cent) and rehabilitation (15 per cent). Research funds, distributed at the national level, support projects in various departments at the University of Adelaide, and at the Institute of Medical and Veterinary Science, the Royal Adelaide Hospital and the Adelaide Childrens Hospital. Research funds are also used in providing local and overseas fellowships and travel grants.

To assist in its work in the fields of rehabilitation and public and professional education, the South Australian Division established the National Heart Foundation Centre in 1963.

## **6.6 SOCIAL WELFARE**

The Commonwealth and State Governments and a large number of voluntary agencies minister to the social welfare of the population. The Commonwealth Government is concerned largely with the dispensing of fixed monetary pensions and benefits and with the provision of repatriation services. State agencies operate in the fields of child welfare and the care of Aborigines and distribute emergency relief in contingencies where Commonwealth assistance is not available or proves insufficient. The voluntary agencies, many of which receive government aid, provide a wide range of services in various fields of social welfare.

### **COMMONWEALTH PENSIONS AND BENEFITS**

#### **EXPENDITURE**

The following table sets out Commonwealth Government expenditure on social welfare. This includes social service payments, payments of national health benefits, grants under the Aged Persons Homes Act, and war and service pensions. It should be noted that the figures are for payments to recipients only, and do not include costs of administering the departments concerned.



## Commonwealth Expenditure on Social Welfare, South Australia

Type of Benefit	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
<b>Social services :</b>					
Aged and invalid pensions (a) .	36,120	38,509	39,691	43,720	46,711
Widows pensions .....	3,884	4,452	4,802	5,448	5,937
Child endowment .....	15,916	16,563	16,988	19,063	17,835
Maternity allowance .....	675	666	657	654	670
Unemployment benefits .....	751	390	709	1,653	1,637
Sickness benefits .....	508	475	512	554	563
Other .....	353	355	356	426	572
<b>Total social service payments ...</b>	<b>58,210</b>	<b>61,408</b>	<b>63,715</b>	<b>71,518</b>	<b>73,925</b>
<b>National health benefits .....</b>	<b>17,080</b>	<b>18,948</b>	<b>21,254</b>	<b>23,100</b>	<b>25,448</b>
Aged persons homes .....	1,348	1,726	2,389	3,274	2,090
War pensions (b) .....	13,535	13,240	14,667	13,642	13,836
Service pensions (b) .....	2,689	2,766	3,025	3,134	3,416
<b>Total payments ....</b>	<b>92,862</b>	<b>98,088</b>	<b>105,050</b>	<b>114,668</b>	<b>118,715</b>

(a) Includes allowances to wives of invalids and to wives of invalids on behalf of children.

(b) Includes Northern Territory. Includes pensions paid to dependants.

## COMMONWEALTH SOCIAL SERVICES

Brief details of Commonwealth pensions and benefits are given in this section; however in discussing the eligibility of persons for the various payments all the necessary qualifications and exceptions to the general rule have not been delineated. Similarly such terms as 'income' and 'property' have not been defined. For more complete details reference should be made to the booklet *Commonwealth Social Services* issued by the Department of Social Services.

## Historical

The first Commonwealth social service payments were made in 1909 when age pensions of \$1.00 per week, subject to a means test, were introduced. In the following year payments were extended to invalid pensioners.

Maternity allowances were introduced in 1912 and were subject to a means test from 1931 to 1943.

Child endowment was first paid in 1941; however, endowment for the first child and for student children dates from 1950 and 1964 respectively.

Rehabilitation services for invalid pensioners were introduced in 1941 and subsequently extended in 1948 to unemployment and sickness beneficiaries and in 1955 to tuberculosis patients, and young people of fourteen and fifteen years of age likely to become pensioners.

Widows pensions were introduced in 1942, funeral benefits in 1943 and unemployment and sickness benefits in 1944. Widow pensioners became eligible for rehabilitation services in 1958.

All Aborigines, except those who are primitive or nomadic, became eligible for age, invalid, and widows pensions in 1959.

Agreements for reciprocity in social service payments were first signed with New Zealand in 1943 and the United Kingdom in 1953. Details of these agreements appear on pages 241-2.

**Age and Invalid Pensions**

Age pensions are payable to men aged sixty-five and over and women aged sixty and over, who have lived in Australia continuously for a period of ten years. If a person has completed five years but not ten years continuous residence, but has lived in Australia for periods which, in total exceed ten years, he may be eligible. Absences from Australia in certain circumstances and residence in New Zealand or the United Kingdom may be treated as residence in Australia.

Invalid pensions are payable to persons aged sixteen years and over who have lived in Australia continuously for five years and who are permanently incapacitated to an extent of at least 85 per cent, or are permanently blind. Where the incapacity or blindness occurred outside of Australia, other than during a temporary absence, ten years continuous residence is necessary. If a person subject to the ten year qualification has completed five years but not ten years continuous residence, but has lived in Australia for periods which, in total exceed ten years, he may be eligible. Absences from Australia in certain circumstances and residence in New Zealand or the United Kingdom may be treated as residence in Australia in qualifying for an invalid pension.

**Age and Invalid Pensions, South Australia**  
**Number of Pensioners**

At 30 June	Age Pensioners			Invalid Pensioners		
	Males	Females	Total	Males	Females	Total
1964.....	16,888	40,392	57,280	4,519	3,774	8,293
1965.....	17,018	41,290	58,308	4,603	3,887	8,490
1966.....	17,330	42,148	59,478	4,607	3,914	8,521
1967.....	18,074	43,361	61,435	4,960	4,126	9,086
1968.....	18,810	45,622	64,432	5,243	4,341	9,584

At 31 December 1968 for both age and invalid pensions the maximum rate payable to an unmarried pensioner, or to a married pensioner whose spouse was not receiving an age or invalid pension, an unemployment, sickness or special benefit, a tuberculosis allowance or a service pension, was \$14 per week. The maximum rate for a married couple, both being pensioners, was \$12.50 per week each. The non-pensioner wife of an invalid pensioner, or of an age pensioner who is permanently incapacitated for work or permanently blind, may be granted a wife's allowance of up to \$7 per week. Where the pensioner is an invalid an allowance of \$2.50 per week is payable for each child under sixteen years or student child under twenty-one years. A supplementary allowance of up to \$2 per week may be paid to certain pensioners paying rent and who are entirely or substantially dependent on their pensions.

Payment of the preceding rates of pension is subject to a means test. Under the means test, provided the annual income plus one tenth of the value of property in excess of \$400 (for a single pensioner) or \$800 (for a pensioner couple) does not exceed \$520 for a single (unmarried, widowed or divorced) pensioner or \$884 for a pensioner couple, full pension is payable. If the combined income-property figure exceeds \$520 (or \$884) then the pension is accordingly reduced. There are certain items of income and property, including an owner-occupied dwelling, which are exempt from the means test. Blind persons are not subject

to the means test except where receiving an allowance for a non-pensioner wife. The child's allowance for the first child of an invalid pensioner is also free of the means test.

### Widows Pensions

Widows pensions are paid to widows and other women who satisfy certain conditions. There is a means test on income and property.

There are three classes of pensions:

Class A, a widow with one or more children under sixteen years of age or a student child under twenty-one years in her custody, care and control.

Class B, a widow of at least fifty years of age with no children under sixteen years, or student children under twenty-one years, or a widow of at least forty-five years of age who ceases to be eligible for a Class A pension because she no longer has a child in her custody, care and control.

Class C, a widow under fifty years of age who has no children under sixteen years of age but is in necessitous circumstances within twenty-six weeks of her husband's death. If a widow is pregnant, a pension may be continued until the birth of the child when she may qualify for a Class A pension.

For Classes A and B the term 'widow' includes a deserted wife who has been deserted at least six months, a divorcee, a woman whose husband has been in prison at least six months, and a woman, whose husband is in a mental hospital.

**Widows Pensions, South Australia**  
**Number of Pensioners**  
*At 30 June*

Class	1964	1965	1966	1967	1968
A .....	2,632	2,868	3,042	3,235	3,480
B .....	3,208	3,363	3,517	3,747	3,922
C .....	2	10	8	9	9
Total .....	5,842	6,241	6,567	6,991	7,411

The normal residential qualification is five years continuous residence immediately prior to claiming a pension; where however, a woman and her husband were living permanently in Australia at the time of the event which qualified her as a 'widow' within the meaning of the Social Services Act no minimum period of residence in Australia is required. Certain absences are not considered as breaking continuity of residence, and residence in New Zealand or the United Kingdom counts as residence in Australia. The means test operates similarly to that for age pensions except that for a Class A widow the property component is relaxed to some degree.

At 31 December 1968 the maximum weekly rates were: for Class A widows, \$18 (including \$4 mothers allowance) plus \$2.50 for each child; for Class B and C widows, \$12.50. Supplementary assistance of up to \$2 per week may be paid to widows who pay rent and are entirely or substantially dependent on their pension.

### Child Endowment

Persons resident in Australia who have the custody, care and control of one or more children under the age of sixteen are eligible for child endowment; approved institutions of which children are inmates are similarly eligible. Endowment is also paid for full-time students between the ages of sixteen and twenty-one years. There is no means test on child endowment, but one year's residence in Australia may be required if the mother and child were not born here.

From 19 September 1967 endowment was paid at the rate of 50 cents per week for the first eligible child under sixteen years; \$1 for the second; \$1.50 for the third; and for each subsequent eligible child the rate was increased by 25 cents per week over that payable for the next elder child *i.e.* \$1.75 for the fourth; \$2 for the fifth etc. Endowment of \$1.50 is paid for each child in an institution, and for full-time students between the ages of sixteen and twenty-one years.

### Child Endowment, South Australia

At 30 June	Families			Institutions			Total Endowed Children
	Endowed Families (a)	Endowed Children		Approved Institu- tions	Endowed Children		
		Under 16	Students 16-20 (b)		Under 16	Students 16-20 (b)	
1964.....	149,449	335,838	13,121	57	1,738	—	350,697
1965.....	153,461	344,019	14,133	54	1,721	89	359,962
1966.....	157,204	350,927	15,276	55	1,677	94	367,974
1967.....	158,645	351,664	17,230	56	1,661	143	370,698
1968.....	159,723	351,366	18,801	56	1,912	197	372,276

(a) Excludes those with only endowed student children.

(b) Student endowment commenced 14 January 1964.

### Maternity Allowances

Any woman, permanently resident in Australia, who gives birth to a child in Australia, is entitled to a maternity allowance. The amount payable depends on the number of existing children under sixteen years of age, and special allowance is made for multiple births. Maternity allowances are not subject to a means test.

### Maternity Allowances, South Australia

#### Claims granted during year

Category	1963-64	1964-65	1965-66	1966-67	1967-68
Single births :					
No other children under 16....	6,812	6,938	7,188	7,564	7,880
One or two children under 16..	9,735	9,622	9,493	9,501	9,860
Three or more children under 16	4,317	4,044	3,687	3,352	3,147
Multiple births :					
Twins .....	230	213	223	178	217
Triplets .....	2	3	3	1	3
Total .....	21,096	20,820	20,594	20,596	21,107

At 31 December 1968 a mother with no other children under sixteen years of age was entitled to an allowance of \$30; where there were one or two such children the rate was \$32, and where there were three or more such children \$35. An extra amount of \$10 is paid for each additional child in multiple births.

### Unemployment and Sickness Benefits

Unemployment and sickness benefits are paid to persons who suffer temporary loss of regular earnings because of unemployment, sickness, or accident. There is a means test on income but not on property.

Persons eligible must be between sixteen and sixty-five years of age (sixty for women) with either twelve months residence or the intention to reside permanently in Australia. A person receiving an alternative pension (except a war pension) is ineligible for unemployment and sickness benefits. A married woman is not usually qualified to receive sickness benefit if her husband can support her.

To qualify for unemployment benefit a person must (a) be unemployed and be able to show that unemployment was not due to his being a direct participant in a strike, (b) be able and willing to undertake suitable work, and (c) have taken reasonable steps to secure work, including registration with the Commonwealth Employment Service.

### Unemployment and Sickness Benefits, South Australia

Year	Unemployment		Sickness		Special (a)	
	Admitted to Benefit	Average Number on Benefit (b)	Admitted to Benefit	Average Number on Benefit (b)	Admitted to Benefit	Average Number on Benefit (b)
1963-64 .....	9,007	1,513	5,553	788	182	141
1964-65 .....	6,711	800	5,685	728	124	131
1965-66 .....	13,593	1,306	6,295	761	164	116
1966-67 .....	22,812	3,094	6,424	871	151	112
1967-68 .....	21,800	3,299	6,724	909	187	102

(a) Excludes special benefits to migrants in accommodation centres.

(b) Average number at the end of each week.

The amount of income which a person may receive and still qualify for the maximum rate of benefit is \$4 per week for an adult or married person under twenty-one, and \$2 per week for a single person under twenty-one. The benefit is reduced by any amount in excess of these figures. For unemployment benefit the income of the claimant's spouse is taken into account.

At 31 December 1968 the maximum weekly benefits payable were \$8.25 for an adult or a married minor, \$4.75 for an unmarried minor eighteen to twenty years of age and \$3.50 for an unmarried minor sixteen to seventeen years of age. An additional \$6 weekly was payable for a dependent spouse, and \$1.50 for each child under sixteen years. A special benefit may be granted to a person not normally qualified for an unemployment or sickness benefit if he is unable to earn a sufficient livelihood for himself and his dependants.

### Rehabilitation

The Commonwealth Rehabilitation Service assists people who are unable to work because of physical handicap or who have had to give up their employment because of sickness or injury. It aims at helping disabled people to reach their maximum physical fitness and to prepare for suitable employment. The service provides a co-ordinated programme of treatment and training to meet the special needs of each disabled person. Rehabilitation is provided free to persons receiving, or eligible to receive an invalid or widows pension, unemployment, sickness or special benefit. Recipients of tuberculosis allowance and children of fourteen and fifteen years otherwise likely to qualify for invalid pension at age sixteen are also eligible.

All rehabilitation activities in South Australia are concentrated at the Commonwealth Rehabilitation Centre, Felixstow. The centre has a treatment capacity of approximately 120, comprising forty residents and eighty non-residents.

When a person begins treatment he continues to receive his existing pension or benefit plus certain expenses. When vocational training begins the pension or benefit is suspended and a rehabilitation allowance is paid instead. Certain additional allowances may also be paid during the period of training. The rehabilitation allowance for an invalid pensioner or an unemployment, sickness, or special beneficiary is equal to and calculated in the same way as the pension for an invalid pensioner. A widow pensioner receives the same rate as under a widows pension.

The Commonwealth Employment Service works with the Rehabilitation Service to help find employment for disabled people. Loans may be granted to assist certain persons in the establishment of home employment.

There is also a training scheme for Class A or Class B widow pensioners to help them to acquire a vocational skill to enable them to undertake full or part-time employment. This operates in much the same way as for those selected for training above, except that the pensioner is not required to be disabled to be eligible for training selection.

### Rehabilitation, South Australia

Year	Number Accepted for Rehabilitation	Number Placed in Employment	Expenditure (a)
			\$
1963-64 .....	249	216	211,724
1964-65 .....	271	228	212,642
1965-66 .....	298	187	203,382
1966-67 .....	282	179	249,027
1967-68 .....	278	241	267,429

(a) Excludes capital expenditure by the Department of Works on sites and buildings, and administrative cost of the Rehabilitation Service.

### Funeral Benefits

A funeral benefit is payable to the person who has paid, or is liable to pay, the cost of the funeral of an age or invalid pensioner or of a person who, but for his death, would have been granted an age or invalid pension. It is also payable in respect of the deceased child or deceased spouse of a pensioner or person who becomes a pensioner within six months after the death of the deceased person.

A funeral benefit is also payable in respect of deceased tuberculosis allowees or to claimants for tuberculosis allowance who, but for their claim for tuberculosis allowance, would otherwise have been eligible for a pension.

At 31 December 1968 the maximum benefit payable was \$20, or \$40 if the person responsible for the funeral was a pensioner.

During 1967-68, 4,532 claims for funeral benefits were granted in South Australia.

### Homes for the Aged

The *Aged Persons Homes Act 1954-1967* provides that grants may be made to certain organisations towards the capital cost of erecting or purchasing approved homes for aged people. Church, charitable, ex-servicemen's organisations and local governing bodies as well as any other organisation approved by the Governor-General are eligible.

Grants may not exceed two-thirds of the capital cost of the home including land or twice the amount (excluding borrowings and other government grants) raised by the organisation towards the capital cost, whichever is less.

At 30 June 1968, 365 grants had been approved in South Australia since the inception of the scheme in 1954. The amount granted, \$16,643,764, was associated with the accommodation of 5,959 persons.

### Sheltered Employment Assistance

The *Sheltered Employment (Assistance) Act 1967* provides for the payment of grants by the Commonwealth to eligible organisations to contribute towards the cost of purchasing, altering, or extending premises for use as sheltered workshops, purchasing equipment for workshops, renting premises for use as workshops and providing accommodation for disabled persons employed in sheltered workshops, the maximum amount payable by the Commonwealth being two-thirds of the total cost in each case. Religious, charitable, ex-servicemen's organisations and local governing bodies are eligible to receive financial assistance in establishing or extending workshops.

Approved workshops are expected to provide opportunities for disabled persons to earn up to the limits imposed by their disabilities. At 30 June 1968, ten grants amounting to \$234,556 had been approved in South Australia since the inception of the scheme on 30 June 1967.

The *Social Services Act 1947-1968* contains provision for the payment of a sheltered employment allowance, at the same rates as invalid pension, which reduces on a graduated scale as workshop earnings increase. The allowance is payable to eligible disabled persons employed at a workshop approved for payment of the allowance. At 30 June 1968, 177 persons in South Australia were receiving the allowance.

### Reciprocal Agreements

*New Zealand.* An agreement between the Governments of Australia and New Zealand for reciprocity in social services came into operation on 3 September 1943 and was amended from 1 July 1949. The reciprocal arrangements cover age and invalid pensions, widows pensions, child endowment, and unemployment and sickness benefits, and apply to both permanent and temporary changes of residence. Residence in one country may be treated as residence in the other country in relation to entitlement to benefits in which a residential qualification applies. Persons from one country taking up permanent residence in the other country become eligible for any of the specified benefits of the new country under

the same conditions (with one or two exceptions) as apply to citizens of that country. Persons in receipt of any of the specified benefits in one country may continue to receive those benefits while temporarily absent in the other country.

*Britain.* A reciprocal agreement on social services between Britain and Australia came into operation on 7 January 1954. Amendments became effective from 1 April 1958 and 1 October 1962. Under the current agreement residence in one country may be treated as residence in the other country as the basis for entitlement to benefits in which a residential qualification applies. Australians going to Britain for permanent residence are treated in Britain as if they had been insured under the National Insurance Scheme while in Australia, so that they can qualify for various National Insurance benefits. There is also provision for the safeguard of social service rights for persons going from one country to the other for temporary residence.

### NATIONAL HEALTH SERVICES

#### Expenditure

The following table shows Commonwealth Government expenditure from the National Welfare Fund on the various aspects of the national health services. The amounts shown are the direct costs of these benefits and services and do not include the cost of administering the services.

#### National Health Services Expenditure, South Australia

Type of Benefit	Year First Paid	1963-64	1964-65	1965-66	1966-67	1967-68
		\$'000				
Hospital and nursing home benefits .....	1946	4,998	5,160	5,458	5,920	6,638
Medical benefits .....	1953	2,820	4,274	4,978	5,156	5,774
Pensioner medical service ...	1951	896	898	1,285	1,407	1,607
Pharmaceutical benefits ....	1948	4,900	5,110	5,670	6,256	6,685
Pensioner pharmaceutical benefits .....	1951	1,908	1,987	2,289	2,705	3,038
Anti-tuberculosis campaign ..	1947	838	743	755	750	700
Free milk for school children	1951	705	757	799	857	952
Miscellaneous .....	—	15	19	20	49	54
Total .....	—	17,080	18,948	21,254	23,100	25,448

#### Hospital Benefits

The Commonwealth pays hospital benefits to patients in approved hospitals and nursing homes under the following arrangements:

- (a) Patients insured with a registered benefit organisation and in an approved hospital receive a benefit (\$2 per day at 1 January 1969) paid through the organisation. Details of registered organisations are given on page 254.
- (b) Uninsured patients are entitled to a benefit (80c per day) which is deducted from the patient's account and paid by the Commonwealth to the hospital.
- (c) Pensioners enrolled with the pensioner medical service and their dependants in public wards of public hospitals are entitled to a special benefit (\$5 per day) which is paid to the hospital, no further charge being made on the pensioner by the hospital.



A Commonwealth nursing home benefit is paid for all qualified patients in approved nursing homes, whether the patient is insured or not. The benefit is deducted from the patient's account and paid by the Commonwealth to the nursing home. At 1 January 1969 this benefit was \$2 per day. In addition since 1 January 1969 a supplementary Commonwealth benefit of \$3 per day is paid to nursing homes (and deducted from patients accounts) for patients requiring and receiving intensive nursing care as distinct from the lighter nursing care normally provided for the majority of patients in such homes. Commonwealth benefit may not be payable where a patient receives a payment by way of compensation or damages.

### Hospital Benefits, South Australia

Year	Hospitals			Nursing Home Patients	Total (a)
	Insured Patients	Uninsured Patients	Pensioner Patients		
			\$'000		
1963-64 .....	1,846	130	1,008	1,634	4,618
1964-65 .....	1,921	122	1,099	1,778	4,920
1965-66 .....	1,977	118	1,191	1,905	5,191
1966-67 .....	1,939	111	1,582	2,009	5,641
1967-68 .....	1,998	103	1,969	2,202	6,272

(a) Excludes amounts paid to special account deficits (these being reimbursements to registered hospital benefit organisations for losses incurred on chronic or pre-existing ailments and long-term illness and advances in respect of these deficits).

### Medical Benefits

Commonwealth medical benefits are paid in respect of medical expenses incurred by persons who are contributors to registered medical benefits organisations or by the dependants of such contributors. The benefits are normally paid through the organisations to the contributor upon receipt of a medical practitioner's account. Medical benefits organisations, with minor exceptions, also pay a fund benefit equal to or greater than the amount of the Commonwealth benefits. Commonwealth benefits may not be payable where a patient receives a payment by way of compensation or damages.

At 31 December 1968 Commonwealth medical benefits ranged from 80c for a general practitioner consultation to \$60 for certain major operations.

Commonwealth expenditure on medical benefits in South Australia in 1967-68 was \$5,720,000, representing 38 per cent of the cost of medical services for which benefits were payable. An additional \$53,000 was paid by the Commonwealth to registered benefit organisations to cover losses incurred in paying benefits in cases of chronic or pre-existing ailments and long-term illness.

Further details of medical benefits organisations are given on pages 254-5.

### Pharmaceutical Benefits

Under the Pharmaceutical Benefits Scheme certain medicines, when prescribed by a doctor are made available to the general public upon the payment of a 50c fee and to pensioners free of cost. The drugs and medicinal preparations available as pharmaceutical benefits are determined on the advice of the Pharmaceutical

Benefits Advisory Committee which also recommends the maximum quantities that can be prescribed. Pharmaceutical benefits are normally obtained through registered pharmacists but most public hospitals may also supply pharmaceutical benefits, as may doctors and certain recognised organisations in isolated areas.

### Pharmaceutical Benefits<sup>(a)</sup>, South Australia

Year	Number of Benefit Prescriptions	Cost of Benefit Prescriptions			Additional Costs to Commonwealth (b)
		Total Cost	Patients Contributions	Net Cost to Commonwealth	
	'000			\$'000	
1963-64.....	n.a.	5,661	1,480	4,181	719
1964-65.....	n.a.	5,900	1,536	4,364	746
1965-66.....	3,362	6,730	1,679	5,051	619
1966-67.....	3,322	6,794	1,659	5,135	1,121
1967-68.....	3,398	6,955	1,699	5,256	1,429

(a) Excludes pensioner benefits.

(b) Payments to hospitals and miscellaneous services.

n.a.—Not available.

### Pensioner Medical Service

The pensioner medical service is a general practitioner service provided free of charge to eligible pensioners and their dependants. The service does not extend to specialist treatment, general anaesthetics or the treatment of fractures. Doctors participating in the service are remunerated by the Commonwealth on a concessional fee basis.

In addition to the general practitioner service, a full range of medicines is available free of cost upon presentation of a doctor's prescription.

Persons eligible for the pensioner medical service are those receiving an age, invalid, widows or service pension, and persons receiving a tuberculosis allowance. Dependent wives and children are also entitled to the benefits of the pensioner medical service.

### Pensioner Medical and Pharmaceutical Benefits, South Australia

Year	Number of Pensioners and Dependants (a)	Commonwealth Payments for Services		
		Medical	Pharmaceutical	Total
	'000		\$'000	
1963-64 .....	77	896	1,908	2,804
1964-65 .....	79	898	1,987	2,885
1965-66 .....	92	1,285	2,289	3,574
1966-67 .....	100	1,407	2,705	4,112
1967-68 .....	108	1,607	3,038	4,645

(a) Enrolled at end of year.

### Anti-Tuberculosis Campaign

Since 1948 the Commonwealth has paid for all additional capital expenditure on tuberculosis clinics and hospitals and for any increase in the cost of diagnosis, treatment, and control of tuberculosis.

The Commonwealth also pays allowances to people suffering from tuberculosis to encourage them to give up work and undergo treatment. The allowances are subject to a means test on income. At 31 December 1968 the maximum income permitted before allowances are affected was \$7 per week for a single person and \$14 for a married person.

At 31 December 1968 the allowance for a married person with dependent wife was \$28.25 plus \$2.50 for each dependent child under sixteen years. A single person without dependants, if not hospitalised, received \$17.25 or if receiving hospital treatment free of charge \$14. Widows or widowers with dependent children under sixteen years received \$18.

#### Anti-Tuberculosis Campaign, South Australia

Commonwealth Expenditure	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Allowances paid to sufferers . . . .	122	105	93	98	80
Maintenance expenditure (a) . . . .	736	666	690	708	651
Capital expenditure . . . . .	30	13	14	5	31
Total . . . . .	888	784	797	811	762

(a) Includes administrative expenses not paid from National Welfare Fund.

### Free Milk for School Children

A Commonwealth reimbursement to the State Government permits the free distribution of one-third of a pint of milk daily to school children attending State and private primary schools, kindergartens, creches and Aboriginal missions.

The State Government administers the scheme and the Commonwealth meets the cost of milk supplied and half the cost of capital, administrative and incidental expenditure. At 30 November 1968 the approximate number of children eligible to participate in the scheme in South Australia was 188,000 while the cost of the milk supplied during 1967-68 was \$952,000.

### REPATRIATION BENEFITS

#### War Pensions

War pensions are paid by way of compensation to ex-servicemen and women who have suffered incapacity due to war service, to their eligible dependants, and to the dependants of those who have died due to war service.

There are four main classes of war pensions:

The special (T.P.I.) rate (\$33.50 per week at 31 December 1968) is payable to those who are deemed totally and permanently incapacitated.

The intermediate rate (\$24.25 per week at 31 December 1968) is payable to an ex-serviceman who, because of the severity of his war-caused incapacity, can work only part-time or intermittently and in consequence is unable to earn a living wage.

The general rate is payable to those who suffered war-caused disabilities but still retained some earning capacity. The pension payable depends on the degree of incapacity, the maximum at 31 December 1968 being \$12 per week, but an additional amount could be payable in some circumstances as a special compensation allowance, to a maximum of \$3.00 per week. Pensions are also payable for a wife and each child under sixteen years of age under both special and general pensions.

The widows rate is payable to widows of ex-servicemen who died as a result of war service, and to any children under sixteen years of age. An additional domestic allowance is payable to certain classes of widows. At 31 December 1968 the widows rate was \$14 per week and the domestic allowance \$7.

### War Pensions<sup>(a)</sup>, South Australia<sup>(b)</sup>

Year	Pensions in Force at End of Year				Expenditure
	Incapacitated Ex-Servicemen	Dependants of Incapacitated Ex-Servicemen	Dependants of Deceased Ex-Servicemen	Total	
	Number				\$'000
1963-64 ..	21,106	39,462	5,033	65,601	13,500
1964-65 ..	21,104	37,711	5,016	63,831	13,209
1965-66 ..	20,969	35,566	5,033	61,568	14,633
1966-67 ..	20,796	33,754	5,075	59,625	13,613
1967-68 ..	20,730	32,024	5,094	57,848	13,808

(a) Excludes pensions payable under Seaman's War Pensions and Allowance Act and various Cabinet decisions.

(b) Includes Northern Territory.

### Service Pensions

Service pensions are payable to ex-servicemen who served in a theatre of war and have reached the age of sixty years (fifty-five for women) or who are permanently unemployable. They are also paid to ex-servicemen suffering from pulmonary tuberculosis. The service pension is equivalent in amount to the social services age and invalid pensions and is subject to the same means test. It also confers eligibility for a full range of medical and dental treatment. The dependants of permanently unemployable or tuberculosis pensioners may continue to receive their appropriate allowance upon the death of the pensioner.

### Service Pensions, South Australia<sup>(a)</sup>

Year	Pensions in Force at End of Year				Expenditure
	Ex-Servicemen	Dependants of Pensioner Ex-Servicemen	Dependants of Deceased Pensioners	Total	
	Number				\$'000
1963-64 ..	5,159	1,340	323	6,822	2,689
1964-65 ..	5,202	1,222	328	6,752	2,766
1965-66 ..	5,200	1,238	342	6,780	3,025
1966-67 ..	5,250	1,308	363	6,921	3,134
1967-68 ..	5,379	1,395	391	7,165	3,416

(a) Includes Northern Territory.

### Medical Services

The Repatriation Department provides in-patient treatment, general practitioner services, certain specialist facilities, pharmaceutical benefits and dental treatment for certain eligible persons. A comprehensive rehabilitation and social worker service is also available.

Medical treatment is provided for all disabilities due to war service and for pulmonary tuberculosis. General medical services are also available to service pensioners, war pensioners receiving the special, intermediate or maximum general rates, widows and dependants of ex-servicemen whose deaths were due to war service, and nurses who served in the 1914-18 War.

In-patient treatment is provided at the Repatriation General Hospital, Daw Park and during 1968 outpatient treatment also became available here, replacing Keswick. Facilities at the Outpatient Department include radiological, pathological and physiotherapy services in addition to medical specialist examinations. The Repatriation Department also maintains an auxiliary hospital, 'Birralee', at Belair, a section of which is set aside for the treatment of tuberculosis patients. The Repatriation Artificial Limb and Appliance Centre, as well as attending to repatriation needs, provides appliances and services for other Government departments and certain philanthropic organisations.

#### Repatriation: Medical Services, South Australia<sup>(a)</sup>

Year	In-Patients : Total Treated			Out-Patients : Number of Visits			Pharmaceutical Benefits
	Daw Park	Birralee	Other Hospitals	Keswick Clinic	Other Institutions	Visits to or by Medical Officer	
	Number						\$
1963-64 .....	4,748	138	696	45,060	15,651	198,559	880,226
1964-65 .....	4,994	105	774	43,733	11,966	204,658	955,966
1965-66 .....	5,147	163	817	44,067	15,149	192,120	1,032,979
1966-67 .....	5,100	153	813	45,368	14,328	195,743	1,155,839
1967-68 .....	5,613	160	970	46,872	15,577	190,291	1,199,838

(a) Includes Northern Territory.

### Education and Training

Assistance in education and training is provided, through the Repatriation Department, for children of ex-servicemen whose death, blindness or total and permanent incapacity was the result of war service. The Soldiers' Children Education Board guides and supervises the progress of children receiving such assistance (see pages 166-7).

In certain circumstances vocational training is also provided for disabled ex-servicemen and widows of ex-servicemen.

The Department is responsible under the *Defence (Re-establishment) Act* 1965-1968 for the administration of the Vocational Training Scheme which is designed to provide national servicemen with post-discharge training where this is necessary for their effective resettlement.

Assistance is generally through the payment of allowances and fees, and the provision of books and equipment.

### Other Services

Other assistance, through the Repatriation Department, includes gift cars for certain disabled ex-servicemen, aids for blinded ex-servicemen, tools-of-trade grants for trainees and business re-establishment loans. Funeral grants of up to \$50 are paid up on the death of certain ex-servicemen and dependants.

## STATE WELFARE SERVICES

## EXPENDITURE

The following table shows expenditure by the State on welfare services. This expenditure includes the work of the Department of Social Welfare and the Department of Aboriginal Affairs, the provision of transport concessions, and grants made to private welfare organisations.

**State Expenditure on Welfare Services, South Australia**  
*Net Cost to Consolidated Revenue Account<sup>(a)</sup>*

Service	1963-64	1964-65	1965-66	1966-67	1967-68
	\$				
Relief of destitute, aged, etc. ....	831,966	886,234	1,012,504	1,192,513	1,205,861
Child welfare:					
Institutions (b) ...	509,052	624,504	682,356	750,184	795,364
Other .....	410,910	450,910	530,829	638,534	671,550
Care of Aborigines ..	1,008,056	1,079,032	1,258,772	1,304,095	1,455,141
Other .....	121,318	79,407	176,429	221,700	220,953
Total .....	2,881,302	3,120,087	3,660,890	4,107,026	4,348,869

(a) Includes interest, maintenance of buildings, etc; excludes capital expenditure from Loan Fund.

(b) Excludes reformatories.

## CHILD WELFARE AND PUBLIC RELIEF

The first official activity for the social welfare of children and adults was taken soon after colonisation. The early State immigration authorities cared for new arrivals, and sometimes immigrants were accommodated temporarily in tents on the parklands. A more permanent solution of the problems of the destitute came with the first Destitute Persons Relief Act in 1842. In 1867 a Destitute Board was formally appointed and assumed responsibility for the welfare of both children and adults. In 1886 a State Children's Council was formed to deal with children, while the Destitute Board continued with its other work. The Children's Welfare and Public Relief Board was created by the Maintenance Act, 1926 to do the work of both these earlier authorities. The Chairman of the Board was the permanent head of the Children's Welfare and Public Relief Department.

In 1965 a new portfolio of Minister of Social Welfare was created. Subsequently the Children's Welfare and Public Relief Board was abolished under the Social Welfare Act, 1926-1965, and its powers and functions vested in the Minister of Social Welfare, a body corporate under the Act. The Department is now the Department of Social Welfare with the Director of Social Welfare as the permanent head.

In addition to its head office at Adelaide, the Department maintains district offices at Brighton, Enfield, Elizabeth, Port Adelaide, Port Augusta, Mount Gambier, and Whyalla while field officers work throughout the State.

## Care and Supervision of Children

One of the major functions of the Department is the care and supervision of State children, these being children committed to the Department, either directly to a departmental institution or generally to the control of the Minister. A child up to eighteen years may be charged with an offence or with being a neglected

or uncontrolled child. In any of these cases he may be made a State child. In most cases the committal is until eighteen years but a child between sixteen and eighteen years may be committed for any period between one year and two years provided that period does not expire before he reaches eighteen years. Where it is for the child's benefit committal may be extended until twenty-one years, or in special cases for girls, beyond twenty-one years. Delinquent children may receive training in one of the reformatory institutions; neglected children may be cared for temporarily at departmental homes or reformatory institutions; uncontrolled children may be placed in reformatory or other institutions depending on the circumstances.

The McNally Training Centre at Magill (completed in November 1967) and Brookway Park (for junior boys) at Campbelltown, are at present the only proclaimed reformatory institutions for boys in South Australia. There are two proclaimed reformatory institutions for girls: Vaughan House at Enfield, where a new building with modern accommodation and training facilities for approximately seventy girls was completed in 1965, is the general reformatory institution for girls and is controlled and operated by the Department; 'The Pines' at Plympton, conducted by the Sisters of the Good Shepherd Congregation, is a proclaimed private reformatory institution controlled by the Minister for the training and rehabilitation of delinquent girls belonging to the Catholic Church.

Neglected boys may be committed to the Glandore Boys Home while girls and very young children of both sexes are accommodated at Seaforth Home, Somerton Park. Children may be transferred to other departmental homes or institutions for care and training. Altogether the Department had twenty-two official institutions and homes for children at the end of June 1968. These include Lochiel Park, a training centre for retarded boys, Struan Farm, a rural training centre at Naracoorte, Woorabinda at Stirling, a hostel and holiday camp for boys, two other boys hostels and two girls hostels for selected older children attending school and seven cottage homes where small groups of children of both sexes live in a family-like atmosphere. Windana, a remand home at Glandore is used to accommodate delinquent and neglected children of both sexes in four separate sections.

It is the policy of the Department to place children out of institutions as soon as possible. They may be allowed to live in their own homes under supervision or be placed in approved foster homes. In the larger institutions for neglected children and in reformatory institutions, departmental placing committees consider the circumstances of each child regularly and make recommendations regarding action to be taken for the child's benefit and welfare.

The Department has a field staff of welfare officers and probation officers to supervise children living in the community. Welfare officers investigate allegations that children are neglected, ill-treated or uncontrolled. Family casework is carried out with a view to improving the circumstances of children and their parents. The homes of illegitimate children under twelve years of age and other children of that age not living with near relatives are visited. In addition to supervising committed delinquent children, probation officers also supervise children placed by Juvenile Courts on bonds where supervision is ordered. Children may be placed voluntarily by their parents or guardians under the supervision of departmental probation officers.

During 1967-68, in addition to State children, 690 children were placed on bonds requiring supervision by departmental officers; the total number of such children under supervision at 30 June 1968 being 1,225. A total of 367 children

was under voluntary supervision. In addition to the above, 4,648 other children were subject to visitation by officers of the Department.

Welfare officers and probation officers are also appointed as attendance officers under the Education Act to assist in the detection and prevention of school truancy. Medical and other specialists including psychologists are employed within the Department.

Details of the number of children committed to the Department in recent years are given in the following table. Of the 757 children committed during 1967-68, 184 were girls, of which all but sixty were neglected or uncontrolled. Girls constituted approximately one-third of all State children at 30 June 1968.

#### State Children<sup>(a)</sup>, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Number of children newly committed during the year :					
Convicted of offences .....	371	406	403	443	529
Neglected .....	192	167	206	162	170
Uncontrolled .....	72	64	52	55	47
Truancy .....	20	12	16	12	10
From other States .....	—	—	—	10	1
Total .....	655	649	677	682	757
Number of State children at 30 June :					
Children in departmental institutions .....	515	564	532	454	530
Children not in institutions .	1,972	2,078	2,237	2,421	2,480
Total .....	2,487	2,642	2,769	2,875	3,010

(a) Excludes children on remand, not committed (932 on remand during 1967-68).

#### Licensing of Maternity Homes, Foster Parents, and Children's Homes

Every foster parent caring for a child under twelve years of age for gain or reward must be licensed by the Department. The children who are fostered are visited by departmental officers. Maternity homes must also be licensed. Under the Social Welfare Act, 1926-1965, every children's home providing permanent care for children under twelve years of age must also be licensed by the Department.

#### Adoptions

South Australia has had an Adoption of Children Act since 1925, the current legislation being the Adoption of Children Act, 1966-1967. Under this Act the interests of the children are considered paramount, the right to place children for adoption is restricted to the Director of Social Welfare or to private adoption agencies which the Director has approved and the adoptive parents become the legal parents once the adoption order is made.

Adoptions made in other Australian States are recognised in South Australia; similarly South Australian adoptions are recognised in the other States.

A more detailed account of the South Australian legislation was included on pages 221-4 of *South Australian Year Book* 1968.



The following table gives the number of adoptions by age group of child for the five years to 1967-68.

Number of Adoptions, South Australia

Age of Child	1963-64	1964-65	1965-66	1966-67	1967-68
Under one year .....	400	506	551	572	562
One year and under two .....	27	24	39	30	38
Two years and under six .....	192	187	193	91	81
Six years and under thirteen ....				104	85
Thirteen years and under sixteen				27	6
Sixteen years and under twenty-one .....				15	8
Total .....	619	717	783	839	780

### Immigrant Children

The Department makes inquiries regarding accommodation and supervision of proposed migrants under twenty-one years of age, who will not be living with a parent or near relative. Under the Commonwealth *Immigration (Guardianship of Children) Act* 1946-1952 the Minister becomes guardian of these children who numbered thirty-three at 30 June 1968.

### Legal Services

Prosecutions for neglected, ill-treated and uncontrolled cases are carried out by departmental officers who may also appear in Court where State children are involved. The Department assists by providing reports on the circumstances of children whose cases are considered by the Courts.

Deserted wives and others are assisted to obtain maintenance from their husbands. When negotiations fail, legal proceedings may be instituted to obtain Court orders for protection, separation, custody of children and maintenance. The Department collects and pays to deserted wives about 1,320 separate amounts weekly. Assistance is given to mothers of illegitimate children in affiliation cases.

### Public Relief

Relief is issued to those in destitute circumstances; this is mainly in the form of cash, although occasionally an order for accommodation or food may be issued. During 1967-68 relief was issued to 4,503 applicants, representing 13,069 persons. Deserted wives accounted for 22 per cent and unemployed for 46 per cent of the total cases issued with relief.

The Department maintains a home at Magill for destitute or necessitous adults, mostly pensioners. The daily average occupancy of the Magill home was 157 during 1967-68.

To deal with cases of emergency there is a staff of housekeepers who are provided for full-time service in homes where there are children and the mother is temporarily sick or incapacitated. A charge is made for this service.

**Expenditure**

Details of expenditure in its various functions are given in the following table.

**Department of Social Welfare, South Australia**

*Net Cost to Consolidated Revenue Account<sup>(a)</sup>*

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$				
<b>Payments:</b>					
General administration .....	140,950	163,974	211,843	247,591	261,354
Supervision and maintenance of children:					
In institutions .....	792,942	908,174	1,081,914	1,179,932	1,242,808
Placed out .....	313,808	343,018	393,067	467,206	478,786
Outdoor relief .....	324,888	307,866	411,252	514,721	573,225
Indoor relief at Magill home ..	342,438	371,742	397,203	435,093	430,954
Other .....	206,568	301,980	285,021	322,215	338,687
<b>Total .....</b>	<b>2,121,594</b>	<b>2,396,754</b>	<b>2,780,300</b>	<b>3,166,758</b>	<b>3,325,814</b>
<b>Receipts .....</b>	<b>372,434</b>	<b>394,218</b>	<b>385,228</b>	<b>382,853</b>	<b>406,512</b>
<b>Net cost to Consolidated Revenue</b>	<b>1,749,160</b>	<b>2,002,536</b>	<b>2,395,072</b>	<b>2,783,905</b>	<b>2,919,302</b>

(a) Most capital expenditure is met from Loan Fund.

### ABORIGINAL WELFARE

Aboriginal welfare in South Australia is administered by the Minister of Aboriginal Affairs, under legislation provided in the Aboriginal Affairs Act, 1962-1968. This Act aims at promoting the welfare of full-blood Aborigines and other persons with Aboriginal blood by providing facilities for guidance in all matters—business, domestic or social—and in some instances by providing financial assistance.

Although all Aborigines and persons of Aboriginal blood are entitled to assistance, they are not obliged to accept it and may if they desire continue to live according to age-old customs. Guidance is provided by Welfare Officers in matters of finances, employment, education, housing, domestic problems and in the fostering of Aboriginal children.

Assistance is given to Aborigines by way of housing in the metropolitan area and country districts, grants to undergo secondary and higher education, loans for business and other purposes and relief to those in necessitous circumstances.

Aboriginal Reserves are maintained at Amata, Coober Pedy, Davenport, Gerard, Indulkana, Koonibba, Point McLeay and Point Pearce. These centres provide vocational training and health education and housing facilities and give Aborigines the opportunity to adapt their traditional way of living to western ways within the security of their own communities. Hostels for secondary school students are conducted in Adelaide and Oodnadatta by voluntary organisations and medical hostels are conducted in Adelaide and Ceduna by the Department of Aboriginal Affairs.

## Aboriginal Welfare: Cost of Services, South Australia, 1967-68

Item	Reserves								Total (a)
	Point Pearce	Point McLeay	Davenport	North West	Cooper Pedy	Gerard	Koonibba	Indulkana	
	\$								
Payments:									
Food, clothing, medical, educational, etc. . . .	5,511	1,811	8,761	2,466	1,414	2,332	1,852	286	126,216
Employment of Aborigines ..	95,280	41,177	81,471	20,320	5,518	45,484	36,797	1,718	370,061
Maintenance of Children in homes and institutions ..	—	—	—	—	—	—	—	—	87,540
Grants to non-departmental missions . . . . .	—	—	—	—	—	—	—	—	28,485
Purchases of land, buildings, plant and equipment	25,785	12,044	28,871	66,716	4,216	24,778	23,675	42,754	304,330
Salaries of administrative, welfare and supervising officers . . . . .	23,748	19,311	24,263	22,497	9,560	16,900	23,642	3,578	407,979
Other . . . . .	43,117	22,634	31,639	30,494	12,605	19,460	29,496	3,810	323,707
Total . . . . .	193,441	96,977	175,005	142,493	33,313	108,954	115,462	52,146	1,648,318
Receipts . . . . .	56,803	13,931	16,264	6,523	872	7,642	13,948	291	182,682
Net cost to State Government . . .	136,638	83,046	158,741	135,970	32,441	101,312	101,514	51,855	1,465,636

(a) Including payments and receipts in relation to other than reserves.

(b) Total cost varies from that shown in the table on page 248 by the inclusion of expenditure on payroll tax and superannuation.

Legislation passed by the State Parliament in recent years specifically affecting Aborigines includes the removal of the prohibition on the sale of alcoholic liquor to Aborigines, the establishment of the Aboriginal Lands Trust to ensure land rights to Aborigines, the establishment of Aboriginal Reserve councils and business undertakings and an Act to prohibit the discrimination against persons by reasons of their race and colour.

Since the Constitutional amendment of August 1967 allowing the Commonwealth to make laws with respect to Aborigines, a Commonwealth Office of Aboriginal Affairs has been established in Canberra. The Commonwealth Government has made \$10 million available for Aboriginal welfare throughout Australia, and this amount will be used mainly for housing, health and education programmes and the financing of Aboriginal business enterprise.

At the 1966 Census 5,505 persons (2,914 males and 2,591 females) were reported as having 50 per cent or more Aboriginal blood.

## OTHER WELFARE ACTIVITIES

The State Government has an agreement with various transport authorities for the carriage of certain disabled persons, pensioners and ex-servicemen on public transport either free of charge or at a reduced fare. The cost to the Government of this service in 1967-68 was \$540,600 which included fare concessions of \$342,600 to pensioners, \$20,000 to blind persons, and \$161,800 to blind and incapacitated ex-servicemen.

The Government through the Chief Secretary also makes annual grants to various charitable agencies and institutions. In 1967-68 these included \$120,000 to the Royal Institution for the Blind; \$35,000 for Meals on Wheels; \$26,000 for aged citizen clubs; \$19,700 for aged persons homes and \$15,200 for the Mentally Retarded Children's Society.

### PRIVATE WELFARE SERVICES

There are numerous charitable and benevolent organisations working within South Australia. A large proportion of these derive at least part of their revenue from regular donations, subscriptions and income from bequests; nearly all derive revenue from special functions. A number also receive Commonwealth, State or local government grants. The Collections for Charitable Purposes Act, 1939-1947, requires the registration of charitable organisations before they may actively solicit funds.

Organisations which have a wide range of activities include the Australian Red Cross Society, the welfare bureaux and missions of the various churches, and organisations catering for ex-servicemen and their dependants. Most of such agencies maintain full-time staff and generally employ professional social workers. Other organisations cater for more specific needs, covering a wide range of physical and sociological disabilities. This includes the care of physically and mentally handicapped persons such as crippled children, the blind, deaf-mutes and alcoholics; also of specific groups such as aged persons, Aborigines and migrants. Many of these organisations depend largely or entirely on voluntary aid.

For details of the numerous bodies concerned with social welfare, reference should be made to the *Directory of Social Agencies* published jointly by the South Australian Council of Social Services and the Department of Public Health.

For those in need, the Citizens Advice Bureau advises on how to benefit from and how to use wisely the many services provided by the Commonwealth and State Governments and the various voluntary organisations.

### REGISTERED MEDICAL AND HOSPITAL ORGANISATIONS

Commonwealth medical benefits and certain hospital benefits operate on the principle of Commonwealth support of voluntary insurance towards meeting medical and hospital expenses. For access to these benefits persons must be insured with a registered organisation. These are non-profit organisations and include a number of Friendly Societies. In most cases both medical and hospital benefits are provided by the one organisation.

**Registered Hospital Organisations, South Australia**

Particulars	Unit	1963-64	1964-65	1965-66	1966-67	1967-68
Registered organisations (a) ..	No.	13	13	13	13	12
Membership (a) .....	'000	367	382	387	403	411
Estimated persons covered (a)	'000	877	920	932	971	997
Fund benefits paid .....	\$'000	4,551	5,328	5,941	6,835	7,921

(a) At end of period.

For hospital benefits the contributions (premiums) depend on the scale of fund benefits required, with separate rates for single persons and for married persons and their dependants.

Although a number of different scales of benefit are available from registered medical organisations, there is one scale which is used predominantly; at 1 January 1968 this provided benefits (to which Commonwealth benefits were added) ranging from 80c for a general practitioner consultation to \$90 for certain

major operations. Increases in benefits from 1 March 1968 for the top ranges of major operations brought the maximum fund benefit for an operation to \$120. Contributions can be made to give either individual or family cover.

Details of registered medical organisations are given in the following table. The number of members has increased steadily over the past fourteen years from 152,000 at 30 June 1954 to 381,000 in 1968. In this period the number of professional services per member increased from 3.55 in 1953-54 to 10.40 in 1967-68 with most of the increase occurring in the mid-1950s.

The table shows also a decrease in the proportion met by members, of the costs for which benefits are payable from 32.4 per cent in 1963-64 to 22.9 per cent in 1965-66; this was due to the introduction on 1 June 1964 of a new schedule which provided for increased Commonwealth benefits, and to increased fund benefits for increased contributions, introduced by the registered organisations on 1 April 1965. Over the same period the percentage of cost met by Commonwealth benefit increased from 29.2 to 39.4 and that met by the fund fell slightly. Since then the proportion met by members has risen to 24.7 per cent, that met by the Commonwealth has fallen to 38.0 per cent and the fund benefit proportion has fallen slightly.

#### Registered Medical Organisations, South Australia

Particulars	Unit	1963-64	1964-65	1965-66	1966-67	1967-68
Registered organisations (a) ..	No.	8	8	8	8	8
Membership (a) .....	'000	330	349	356	373	381
Estimated persons covered (a)	'000	819	867	886	925	952
Cost of medical services:						
Met by fund benefit (b) ....	\$'000	3,657	4,013	4,712	5,128	5,608
Met by Commonwealth benefit (b) .....	\$'000	2,781	4,230	4,933	5,111	5,720
Met by insured member ....	\$'000	3,095	3,111	2,869	3,202	3,713
Total .....	\$'000	9,533	11,354	12,514	13,441	15,041
Fund benefits for ancillary services (c) .....	\$'000	109	190	223	237	261
Professional services per member:						
General practitioner ....	No.	6.05	6.23	6.29	6.29	6.40
Other .....	No.	2.30	2.41	2.64	2.71	4.00
Total .....	No.	8.35	8.64	8.93	9.00	10.40

(a) At end of period.

(b) The Commonwealth figure excludes amounts paid to special account deficits (these being reimbursements to registered benefit organisations for losses incurred on chronic or pre-existing ailments and long-term illness). Such amounts have been included under cost to fund.

(c) Services for which Commonwealth benefits are not provided.

#### FRIENDLY SOCIETIES

Friendly Societies are mutual organisations paying medical, hospital and other benefits to members and dependants in time of need.

These societies are required to register under the Friendly Societies Act, 1919-1968. The Act is administered by the Chief Secretary through the Public Actuary who approves the table of contributions, the level of benefits and generally sees that the societies' rules and practices are in accordance with the law.

A number of Friendly Societies are registered to pay Commonwealth medical and hospital benefits (see previous section), while others re-insure such benefits through a society created for this purpose.

Other benefits offered by the societies include sickness, funeral, pharmaceutical and physiotherapy benefits; endowment assurance is also available. The Friendly Societies Act requires that separate funds be maintained for each of these benefits and members may contribute for all or for only a selection of benefits. However, a person is considered to be a full benefit member only if he contributes for sick pay and funeral benefits regardless of contributions for other benefits.

The level of benefits paid varies between societies, with sickness benefits generally on a declining scale as the period of illness lengthens. The Friendly Societies Act limits to \$4,000 any payment for endowment or funeral benefits and to \$21 any weekly payment to members for sickness or superannuation.

#### Friendly Societies, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Number of registered societies (a)	14	14	14	14	14
Number of members (a) (b) . . . .	50,946	51,258	51,109	51,001	51,070
	\$'000				
Revenue (c):					
Contributions and levies . . . .	4,013	4,687	5,836	6,562	6,947
Interest, dividends and rent . .	642	672	698	755	808
Other . . . . .	370	476	475	673	584
Total revenue . . . . .	5,024	5,835	7,009	7,990	8,339
Expenditure (c):					
Sick pay . . . . .	178	188	179	188	190
Medical attendance and medicine . . . . .	1,566	1,780	2,094	2,305	2,473
Sums payable at death . . . .	128	125	125	139	143
Hospital benefits . . . . .	1,522	1,858	2,116	2,441	2,738
Administration . . . . .	752	837	910	997	1,057
Other . . . . .	235	340	420	565	465
Total expenditure . . . .	4,382	5,128	5,843	6,635	7,065
Total funds . . . . .	12,989	13,696	14,862	16,217	17,490

(a) At 30 June.

(b) Full benefit members; does not include those who contribute to medical and hospital benefits only.

(c) Receipts and payments of Commonwealth medical and hospital benefit subsidies excluded.

The Friendly Society Medical Association operates twenty-nine pharmacies in the metropolitan area and one at Port Pirie where medicines are dispensed for Friendly Society members at concession prices.

The Friendly Societies Act also prescribes the nature of assets which societies may hold. Their most important investment is in property mortgages and in particular in housing loans to members. They may also invest in governmental securities, and a number of societies own valuable city freeholds.

## 6.7 MARRIAGE

Registration of marriage has been compulsory in South Australia since 1842 when Acts 'for regulating Marriages in the Province of South Australia' and 'for registering Births, Deaths and Marriages in the Province of South Australia' were passed. The present law relating to marriages is contained in the Commonwealth *Marriage Act* 1961-1966 which was assented to on 6 May 1961. This Act, which applies to all the States, the two mainland Territories and Norfolk Island, came into full operation on 1 September 1963, some of its minor provisions having been in operation from the date of assent. The South Australian Act superseded by the Commonwealth legislation was the Marriage Act, 1936-1957.

The Principal Registrar of Births, Deaths and Marriages in South Australia carries out the statutory duties under the Act and has supervision over ministers of religion (as regards their duties under the Marriage Act) and other officers empowered to perform marriages. Only the Principal Registrar, the Deputy Registrar, District Registrars appointed to the twenty-two registration districts, authorised ministers of religion and other authorised celebrants may celebrate marriages.

After the marriage, celebrants are required to forward the official certificate of marriage to the Principal Registrar who maintains at his office a register of all marriages in South Australia. In addition, a copy of the marriage certificate is prepared and forwarded by the office of the Principal Registrar to the District Registrar of the district in which the marriage was celebrated and each District Registrar maintains a register of the marriages performed in his district.

The average annual number of marriages and the rates per 1,000 of mean population in selected ten-yearly periods since 1906 and numbers and rates for each of the most recent six years are shown in the following table.

**Marriages, South Australia**

Ten-Year Period	Average Annual Number of Marriages	Rate per 1,000 of Mean Population	Year	Number of Marriages	Rate per 1,000 of Mean Population
1906-15 .....	3,596	8.86	1963.....	7,302	7.24
1916-25 .....	3,978	8.16	1964.....	7,765	7.50
1926-35 .....	4,001	6.97	1965.....	8,680	8.16
1936-45 .....	6,122	10.14	1966.....	9,051	8.29
1946-55 .....	6,436	8.92	1967.....	9,434	8.49
1956-65 .....	7,016	7.35	1968.....	9,652	8.57

During the period from 1852 to 1858 the marriage rate varied between about 10 and 13 per 1,000 of mean population, then fluctuated but gradually declined to 5 in 1897. It then rose steadily to 9.8 in 1911, fluctuated considerably during the 1914-18 War then levelled to about 8 in the 1920s. The conditions in the period leading up to and during the depression of the early 1930s brought about a marked decline to 5.3 in 1931. By 1938 the rate had risen to 9.3 and during the subsequent war years of 1939-45 it rose to 13.3 in 1942, the highest

ever recorded, then fell to 8.5 in 1945. Following the return and demobilisation of servicemen the rate rose to over 10 in the years 1946-48 then fell steadily to 7.0 in 1960. Since 1960 the rate has risen in each successive year. The decline to 1960 in the marriage rate is related to the effect of the low birth rate of the depression years on the number of persons reaching the normal marrying age.

Particulars relating to first marriages and remarriages annually since 1959 are shown in the following table.

**Marital Status of Persons Marrying, South Australia**

Year	Bridegrooms			Brides			Percentage of Total Married					
							Bridegrooms			Brides		
	Bachelors	Widowers	Divorced	Spinsters	Widows	Divorced	Bachelors	Widowers	Divorced	Spinsters	Widows	Divorced
1959.....	5,937	310	367	5,853	352	409	89.8	4.7	5.5	88.5	5.3	6.2
1960.....	5,966	289	352	5,870	323	414	90.3	4.4	5.3	88.8	4.9	6.3
1961.....	6,085	295	424	6,006	336	462	89.4	4.4	6.2	88.3	4.9	6.8
1962.....	6,318	268	435	6,284	302	435	90.0	3.8	6.2	89.5	4.3	6.2
1963.....	6,611	277	414	6,516	305	481	90.5	3.8	5.7	89.2	4.2	6.6
1964.....	7,052	285	428	7,034	282	449	90.8	3.7	5.5	90.6	3.6	5.8
1965.....	7,878	286	516	7,838	325	517	90.8	3.3	5.9	90.3	3.7	6.0
1966.....	8,168	323	560	8,165	306	580	90.2	3.6	6.2	90.2	3.4	6.4
1967.....	8,595	312	527	8,542	332	560	91.1	3.3	5.6	90.5	3.5	6.0
1968.....	8,328	309	515	8,821	324	507	91.5	3.2	5.3	91.4	3.3	5.3

Prior to 1951, of the widowed persons remarrying the number of males usually exceeded the females but since then the number of males have in most years been less than the number of females. In the cases of divorced persons remarrying the number of males exceeded females in most years prior to 1940 but since then females have usually exceeded males in each year.

The following statement shows age at marriage of bridegrooms and brides who were married during 1968 classified by marital status.

**Age at Marriage and Marital Status, South Australia, 1968**

Age	Marital Status at Marriage							
	Bridegrooms				Brides			
	Bachelors	Widowers	Divorced	Total	Spinsters	Widows	Divorced	Total
Under 21 years ....	1,416	1	—	1,417	4,210	2	1	4,213
21 to 24 years ....	4,793	2	14	4,809	3,692	8	52	3,752
25 to 29 years ....	1,808	2	89	1,899	606	14	109	729
30 to 34 years ....	439	11	93	543	158	21	74	253
35 to 39 years ....	189	11	68	268	62	27	69	158
40 to 44 years ....	82	26	84	192	40	31	85	156
45 years and over ..	101	256	167	524	53	221	117	391
All ages...	8,828	309	515	9,652	8,821	324	507	9,652

In the following table of percentages of bridegrooms and brides in various age-groups, the earliest available figures in each sector have been shown together with figures for selected later years.



**Age Distribution of Bridegrooms and Brides: Percentage to Total Marriages**  
**South Australia**

Year	Under 21 Years	21 to 24 Years	25 to 29 Years	30 to 44 Years	45 Years and Over	Under 21 Years	21 to 24 Years	25 to 29 Years	30 to 44 Years	45 Years and Over
<b>ALL BRIDEGROOMS</b>						<b>ALL BRIDES</b>				
1903....	2.7	27.8	35.8	28.5	5.2	19.2	37.5	26.7	14.7	1.9
1911....	3.3	28.7	37.1	25.6	5.3	17.1	37.4	28.3	14.7	2.5
1921....	3.2	25.6	36.8	29.0	5.4	16.1	35.9	28.2	17.0	2.9
1931....	6.8	30.8	33.7	22.8	5.9	25.8	37.2	21.2	12.9	2.9
1941....	4.1	32.5	34.6	22.9	5.9	20.5	38.8	22.4	15.0	3.3
1951....	6.2	37.3	28.1	20.6	7.8	27.8	36.6	15.8	14.6	5.2
1961....	10.6	40.9	24.2	17.5	6.8	40.8	34.4	9.7	9.6	5.5
1964....	12.7	44.2	23.6	13.8	5.7	44.4	35.0	8.3	8.0	4.3
1965....	14.7	44.2	22.8	12.4	5.9	45.1	35.1	8.2	7.1	4.5
1966....	15.3	45.4	21.9	11.8	5.6	45.4	35.1	8.3	6.7	4.5
1967....	15.7	46.8	20.4	11.5	5.6	45.8	36.0	7.6	6.2	4.4
1968....	14.7	49.8	19.7	10.4	5.4	43.6	38.9	7.5	5.9	4.1
<b>BACHELORS</b>						<b>SPINSTERS</b>				
1928....	5.8	33.4	37.4	21.1	2.3	23.9	40.5	22.5	12.1	1.0
1931....	7.4	33.2	35.9	21.0	2.5	27.3	39.2	21.8	10.7	1.0
1941....	4.5	35.0	37.0	21.6	1.9	21.9	41.4	23.0	12.7	1.0
1951....	7.1	42.5	30.9	16.9	2.6	31.8	41.5	15.8	9.2	1.7
1961....	11.9	45.5	26.3	14.9	1.4	46.1	38.2	9.3	5.3	1.1
1964....	13.9	48.5	25.3	11.1	1.2	49.0	38.1	8.1	4.0	0.8
1965....	16.1	48.6	24.4	9.7	1.2	49.9	38.4	7.6	3.3	0.8
1966....	16.9	50.0	23.2	8.7	1.0	50.2	38.2	7.6	3.2	0.8
1967....	17.2	51.2	21.7	8.7	1.2	50.5	39.1	7.0	2.7	0.7
1968....	16.1	54.3	20.5	8.0	1.1	47.7	41.9	6.9	2.9	0.6

In 1968, 70.4 per cent of first marriages of men and 89.6 per cent of first marriages of women were of persons who were under twenty-five years of age. This compares with the 1928 figures of 39.2 per cent and 64.4 per cent respectively.

The following table shows the average age of bridegrooms and brides during the last ten years. From 1908 to 1955 there was little change in the average age of all bridegrooms and all brides—from 29.4 years to 29.2 years for bridegrooms and from 25.9 to 26.0 for brides, with some minor fluctuations in between which can be related to the two World Wars and the depression of the early 1930s.

**Average Age at Marriage, South Australia**

Year	Bridegrooms				Brides			
	Bachelors	Widowers	Divorced	All Bridegrooms	Spinsters	Widows	Divorced	All Brides
1959.....	26.2	57.7	40.6	28.5	22.8	48.4	37.4	25.1
1960.....	25.6	56.3	41.2	28.0	22.5	49.0	36.7	24.7
1961.....	25.8	57.1	41.2	28.1	22.4	49.1	36.9	24.7
1962.....	25.8	56.9	42.5	28.0	22.4	49.3	38.8	24.6
1963.....	25.5	55.0	41.5	27.5	22.1	49.8	37.8	24.3
1964.....	25.2	55.6	41.9	27.2	22.0	49.2	38.6	24.0
1965.....	24.9	56.0	42.3	26.9	21.8	51.4	37.8	23.9
1966.....	24.7	55.4	40.6	26.8	21.8	51.6	37.3	23.8
1967.....	24.6	56.0	41.8	26.6	21.8	50.4	37.9	23.7
1968.....	24.5	57.4	40.5	26.4	21.8	51.0	37.5	23.6

The average age of all bridegrooms and brides rose slightly between 1942 and 1955 but has subsequently fallen. On the other hand, average age of previously unmarried bridegrooms and brides has fallen steadily since 1942, from 27.4 to 24.5 and from 24.6 to 21.8 respectively.

## MARRIAGE OF MINORS

The Commonwealth *Marriage Act* 1961-1966 stipulates the marriageable age to be eighteen years or over for a male and sixteen years or over for a female. Under exceptional circumstances a magistrate can, upon application by a party who has not attained marriageable age but who is at least sixteen in the case of a male or fourteen in the case of a female, authorise him or her to marry a particular person who is of marriageable age.

South Australian legislation operative prior to the Commonwealth Act, and proclaimed on 1 March 1958, provided that a marriage between persons either of whom was a boy under the age of eighteen years or a girl under the age of sixteen years should be void, with further provision, upon application, for the Chief Secretary at his discretion to waive the provisions in relation to males aged fourteen to seventeen years and females aged twelve to fifteen years. Prior to this it had been the practice to apply the provisions of British common law prohibiting the marriage of either a male under fourteen or a female under twelve.

In all cases where a party to a marriage is under twenty-one years, prior consent must be obtained from either both parents, one parent, a guardian or guardians, or other prescribed authority, according to the circumstances.

Figures for the first year for which information of marriages of minors is available and for the five years to 1968 are shown in the following table.

Marriages of Minors, South Australia

Year	Age in Years							Total Minors	Percentage of Total Marriages
	14 or Less	15	16	17	18	19	20		
BRIDEGROOMS									
1903.....	—	—	—	—	8	14	38	60	2.7
1964.....	—	—	2	24	185	305	466	982	12.7
1965.....	—	—	—	16	226	436	598	1,276	14.7
1966.....	—	—	1	19	221	518	624	1,383	15.3
1967.....	—	—	2	19	228	513	718	1,480	15.7
1968.....	—	—	1	19	204	501	692	1,417	14.7
BRIDES									
1903.....	—	5	12	45	93	135	143	433	19.2
1964.....	2	11	178	454	698	971	1,135	3,449	44.4
1965.....	—	9	193	462	895	1,124	1,231	3,914	45.1
1966.....	3	5	188	425	834	1,375	1,275	4,105	45.4
1967.....	1	4	179	440	823	1,265	1,605	4,317	45.8
1968.....	—	7	176	391	866	1,293	1,480	4,213	43.6

From 1903 to 1928 the proportion of bridegrooms under twenty-one remained under 5 per cent with a general upward trend interrupted during and in the years immediately after the 1914-18 War. The proportion continued to rise to a figure of 6.8 per cent in 1931 then fell steadily to 3.1 per cent in 1939. From that year there has been a further general upward movement, again with an interruption in the years immediately following the 1939-45 War.

The proportion of brides under twenty-one has followed a similar pattern, remaining under 20 per cent until 1925, rising to 25.8 per cent in 1931, falling to 16.3 per cent in 1936 and generally maintaining an upward trend from 1939. Proportions rose in each successive year for male minors from 1954 to 1967 and for female minors from 1950 to 1967.

### RELIGIOUS DENOMINATION OF MARRIAGES

The number of marriages celebrated in South Australia by ministers of religion in 1968 was 8,633 representing 89.5 per cent of the total. Civil marriages numbered 1,019, or 10.5 per cent of the total. The following table shows the number and proportion of civil marriages and of marriages solemnised according to the rites of the principal religious denominations during the four years to 1968.

#### Denomination of Marriage Ceremony, South Australia

Denomination	Number of Marriages				Proportion of Total Marriages			
	1965	1966	1967	1968	1965	1966	1967	1968
					%	%	%	%
Baptist .....	178	201	245	248	2.0	2.2	2.6	2.6
Catholic .....	1,723	1,814	1,992	2,005	19.8	20.0	21.1	20.8
Churches of Christ .....	292	276	298	314	3.4	3.1	3.2	3.3
Church of England .....	1,803	1,894	1,984	2,104	20.8	20.9	21.0	21.8
Congregational .....	265	319	304	321	3.1	3.5	3.2	3.3
Lutheran .....	479	495	512	488	5.5	5.5	5.4	5.1
Methodist .....	2,090	2,258	2,357	2,384	24.1	24.9	25.0	24.7
Orthodox .....	312	259	187	197	3.6	2.9	2.0	2.0
Presbyterian .....	345	358	370	366	4.0	4.0	3.9	3.8
Salvation Army .....	56	62	51	50	0.6	0.7	0.5	0.5
Other denominations .....	118	139	146	156	1.4	1.5	1.6	1.6
Civil marriages .....	1,019	976	988	1,019	11.7	10.8	10.5	10.5
Total .....	8,680	9,051	9,434	9,652	100.0	100.0	100.0	100.0

## 6.8 DIVORCE

### LEGISLATION

The Supreme Court of South Australia has had jurisdiction in divorce from 1 January 1859, the date upon which the Matrimonial Causes Act, 1858 came into operation. The present law is contained in the Commonwealth *Matrimonial Causes Act* 1959-1966 which came into operation on 1 February 1961 and which provides a uniform law throughout Australia for dissolution of marriage and other matrimonial causes and vests the Supreme Courts of the States and Territories with jurisdiction to hear and determine causes under the Act. Its transitional provisions covered matrimonial causes instituted prior to 1 February 1961, and gave petitioners the advantages of the new Act without detracting from their position under the former legislation.

The principal form of relief petitioned for and granted by the Court is dissolution of marriage (commonly known as divorce) with provision also for petitions for nullity of marriage, judicial separation, restitution of conjugal rights and jactitation of marriage.

A decree of dissolution of marriage and in some instances of nullity of marriage is in the first instance a decree *nisi*. Under the provisions of the current Act, in general a decree *nisi* automatically becomes absolute at the expiration of three months, unless rescinded by the Court, unless an appeal has been instituted or unless there are children of the marriage in respect of whom proper arrangements have not been made for welfare, advancement and education.

Grounds on which petitions for dissolution of marriage could be lodged under the 1858 Act were limited for a husband's petition to adultery and for a wife's petition to rape, sodomy, bestiality, or adultery qualified as incestuous, with bigamy, with cruelty, or with desertion for one year and upwards.

Since this Act came into operation the following changes to the grounds on which a petition could be lodged for dissolution of marriage have been made to State legislation by enactment or amendment:

From 29 May 1919 the qualifications to the ground of adultery on the petition of a wife were removed.

From 1 March 1929 the grounds of desertion for five years, habitual drunkenness, imprisonment or frequent convictions, attempted murder, repeated assault or cruelly beating and certified mental deficiency were added.

From 20 March 1930 failure to pay maintenance during the five years prior to petition was added as a ground, habitual cruelty was substituted for repeated assault or cruelly beating and 'or inflicting or attempting to inflict grievous bodily harm' was added to the ground of attempted murder.

From 15 February 1939 the ground of five years separation pursuant to a Court order granting judicial separation or relief from cohabitation was added and the required period for desertion and failure to pay maintenance was reduced from five years to three years.

From 26 March 1942 under certain circumstances the Court was empowered to make an order of presumption of death and of dissolution of the marriage.

The grounds on which petitions can be filed for dissolution of marriage under the Commonwealth *Matrimonial Causes Act* 1959-1966 can be briefly described as: adultery; desertion for not less than two years; refusal to consummate the marriage; habitual cruelty for not less than one year; rape, sodomy or bestiality; habitual drunkenness or habitual intoxication by drugs for two years or more; frequent convictions for crime and failure to support (only on petition of wife); imprisonment for at least three years of a sentence of at least five years; conviction of attempted murder or inflicting or attempting to inflict grievous bodily harm on the petitioner; failure for at least two years to pay maintenance; failure for at least one year to comply with a decree of restitution of conjugal rights; insanity; separation for at least five years; and presumption of death.

The main effects on grounds in South Australia resulting from the Commonwealth legislation were that a petition on the ground of separation for five years no longer required a Court order granting judicial separation or relief from cohabitation as a pre-requisite, and the period for desertion to constitute a ground for dissolution of marriage was reduced from three to two years. In addition, the period of decree *nisi* is now three months, having been six months under State legislation.

Assessment of the changes in the time series tables in this section should not be made without consideration of the effects of these changes in legislation. Also, it should be noted that fluctuations from year to year in the number of decrees granted may be independent of fluctuations from year to year in the number of petitions filed.

#### PETITIONS LODGED

Particulars of petitions lodged during the ten years to 1968 are shown in the following table. In each of these years petitions lodged for dissolution by wives outnumbered those lodged by husbands. This pattern has prevailed for over fifty years, as petitions by husbands have rarely exceeded those by wives except during the two World Wars.

**Dissolution of Marriage and Other Matrimonial Causes  
Petitions Filed, South Australia**

Year	Dissolution of Marriage			Nullity of Marriage	Judicial Separation	Total Petitions (a)
	By Husbands	By Wives	Total			
1959....	329	460	789	6	1	796
1960....	313	468	781	8	—	789
1961....	406	459	865	9	3	877
1962....	368	542	910	4	1	916
1963....	386	619	1,005	5	3	1,014
1964....	420	614	1,034	5	4	1,045
1965....	390	717	1,107	13	5	1,127
1966....	419	714	1,133	7	2	1,147
1967....	429	749	1,178	11	15	1,207
1968....	422	764	1,186	5	8	1,201

(a) Includes petitions lodged for dissolution or nullity: 1962, 1; 1963, 1; 1964, 2; 1965, 2; 1966, 3; 1967, 2; and petitions lodged for dissolution or judicial separation: 1966, 2; 1967, 1; 1968, 1.

**DECREES GRANTED**

The following table shows the number of decrees absolute granted for dissolution and nullity of marriage and decrees granted for judicial separation. While no doubt the large increase in decrees absolute granted from 1940 is partly due to the 1939 legislative changes, it also reflects the abnormal conditions experienced during and immediately after the war.

**Dissolution of Marriage and Other Matrimonial Causes  
Decrees Absolute Granted, South Australia**

Period	Dissolution of Marriage			Nullity of Marriage	Judicial Separation
	To Husbands	To Wives	Total		
<b>Annual Average</b>					
1916-20 .....	14.8	7.8	22.6	0.2	0.6
1921-25 .....	37.2	45.2	82.4	0.8	0.6
1926-30 .....	48.0	58.6	106.6	0.6	0.4
1931-35 .....	73.0	93.8	166.8	0.6	0.8
1936-40 .....	105.0	137.4	242.4	1.4	1.8
1941-45 .....	216.2	215.2	431.4	1.2	1.4
1946-50 .....	317.0	329.0	646.0	3.6	1.6
1951-55 .....	262.8	350.0	612.8	4.6	1.2
1956-60 .....	244.2	294.2	538.4	7.6	1.6
1961-65 .....	334.6	446.8	781.4	4.6	0.6
<b>Year</b>					
1964.....	(a) 358	(a) 530	887	3	—
1965.....	(a) 355	(a) 498	852	3	—
1966.....	407	662	1,069	9	2
1967.....	360	569	929	9	1
1968.....	336	579	915	4	3

(a) Includes one granted to both husband and wife.

A petition can be lodged and a decree granted on more than one ground—for 1961 and subsequent years these combinations have been recorded separately. Prior to 1961 one of the grounds was selected for classification, e.g. 'adultery

and desertion' was classified as 'adultery', and for the purpose of comparison the figures for the years 1961 and later have been similarly treated in the next table, which relates to grounds on which decrees absolute have been granted for dissolution of marriage. The number of decrees granted for dissolution on more than one ground were: 1964, 71; 1965, 28; 1966, 9; 1967, 16; 1968, 33.

### Dissolution of Marriage: Grounds of Decrees Absolute, South Australia

Period	Grounds on which Granted						Total
	Adultery	Cruelty	Desertion	Drunkenness	Separation	Other	
HUSBAND AS PETITIONER							
Annual Average							
1933-35 ..	45.3	—	27.3	0.3	—	2.7	75.6
1936-40 ..	62.2	—	40.8	0.8	0.2	1.0	105.0
1941-45 ..	131.2	0.8	77.6	1.0	2.8	2.8	216.2
1946-50 ..	179.6	1.6	127.0	1.4	1.6	5.8	317.0
1951-55 ..	131.2	5.0	120.4	0.6	1.8	3.8	262.8
1956-60 ..	133.4	4.0	103.2	0.4	1.4	1.8	244.2
1961-65 ..	127.2	3.4	146.9	0.8	54.2	2.1	334.6
Year							
1964.....	(a) 146	3	128	2	76	3	(a) 358
1965.....	126	6	(a) 160	—	63	—	(a) 355
1966.....	168	4	146	2	83	4	407
1967.....	142	—	144	1	69	4	360
1968.....	129	3	153	—	46	5	336
WIFE AS PETITIONER							
Annual Average							
1933-35 ..	60.0	3.0	31.0	2.3	—	15.3	111.6
1936-40 ..	65.4	9.2	47.0	3.4	0.4	12.0	137.4
1941-45 ..	95.0	17.8	79.6	4.6	6.6	11.6	215.2
1946-50 ..	148.4	40.2	125.4	4.4	3.8	6.8	329.0
1951-55 ..	100.4	93.6	136.6	7.8	6.4	5.2	350.0
1956-60 ..	76.6	93.8	106.8	7.0	4.4	5.6	294.2
1961-65 ..	95.0	98.0	157.9	6.8	80.8	8.3	446.8
Year							
1964.....	(a) 112	109	184	11	104	10	(a) 530
1965.....	96	100	(a) 165	9	117	11	(a) 498
1966.....	145	133	219	30	130	5	662
1967.....	133	122	203	11	97	3	569
1968.....	140	116	208	19	91	5	579

(a) Includes one granted to both husband and wife.

Details for grounds were not recorded until 1933, but in all years prior to 1929 adultery was virtually the only ground upon which a divorce could be granted.

The ages at marriage of persons divorced are shown in the following table.

### Dissolution of Marriage: Decrees Absolute, Age at Time of Marriage South Australia

Year	Age at Marriage							Total	
	Under 20	20-24	25-29	30-34	35-39	40-44	45 and Over		Not Stated
HUSBANDS									
1964....	53	399	245	100	45	20	19	6	887
1965....	54	418	212	73	46	20	26	3	852
1966....	86	516	265	103	47	24	26	2	1,069
1967....	76	459	206	99	41	24	23	1	929
1968....	73	460	202	79	36	23	42	—	915
WIVES									
1964....	245	392	139	52	27	9	17	6	887
1965....	275	380	88	47	34	12	14	2	852
1966....	369	437	135	56	32	20	19	1	1,069
1967....	340	371	119	34	33	9	21	2	929
1968....	308	394	109	42	19	16	27	—	915

Information of the relative ages at marriage of husbands and wives for marriages dissolved in 1967 is contained in the following table.

**Dissolution of Marriage: Decrees Absolute, 1967**

**Relative Ages at Marriage of Husbands and Wives, South Australia**

Age of Husband at Marriage	Age of Wife at Marriage							Total Husbands
	Under 20	20-24	25-29	30-34	35-39	40 and Over	Not Stated	
Under 20 .....	64	11	1	—	—	—	—	76
20-24 .....	219	205	29	5	—	1	—	459
25-29 .....	38	111	42	10	4	—	1	206
30-34 .....	13	32	32	11	8	3	—	99
35-39 .....	4	7	10	5	10	5	—	41
40 and over .....	2	5	5	3	11	21	—	47
Not stated .....	—	—	—	—	—	—	1	1
Total wives ..	340	371	119	34	33	30	2	929

The following table shows the duration of marriage, *i.e.* the interval between marriage and the date the decree was made absolute, for marriages dissolved in 1946 (the first year so tabulated) and during the last six years.

**Dissolution of Marriage: Decrees Absolute, Duration of Marriage  
South Australia**

Year	Duration of Marriage (Years)									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 and Over	
1946....	167	197	119	74	48	28	16	5	—	654
1963....	43	202	172	166	90	58	12	10	12	765
1964....	61	207	183	185	122	70	32	16	11	887
1965....	64	222	186	154	114	59	30	14	9	852
1966....	83	282	222	182	137	88	41	17	17	1,069
1967....	89	248	184	170	127	65	25	15	6	929
1968....	99	273	165	137	117	70	34	13	7	915

Of the marriages dissolved in 1968, 10.8 per cent were under five years duration and 40.7 per cent were under ten years duration. The corresponding proportions in 1946, when these particulars were first tabulated, were 25 per cent and 55 per cent. The comparatively early 'break-up' of marriages which were dissolved in 1946 partly can be attributed to the abnormal war-time conditions: in each of the next three years the proportion of divorces for marriages of less than ten years duration was 49 per cent, higher than in any subsequent year.

The lower proportions in recent years, particularly in the first three years under Commonwealth legislation, probably are at least partly because of the steep increase in the number of decrees absolute granted on the ground of separation for five years. Prior to the commencement of operation of Commonwealth legislation, a petition for dissolution on the ground of separation required a Court order issued at least five years previously. As the result of the removal of this restriction some of the subsequent petitions on this ground almost certainly came from persons who previously had no ground on which to petition, and probably many of them were in the higher marriage duration group. The effect was a rise in the proportion of dissolved marriages of ten years duration or more from 61.1 per cent in 1960 to 77.7 per cent in 1963; since then this proportion has fallen to 59.3 per cent in 1968.

The same trend is evident in the following table on age at time of decree absolute which shows that in 1946 nearly 52 per cent of husbands and over 64 per cent of wives were under thirty-five years of age at the time of dissolution but in 1968 the corresponding proportions were 37.9 per cent of husbands and 47.1 per cent of wives.

**Dissolution of Marriage: Age at Time of Decree Absolute  
South Australia**

Year	Age at Time of Decree Absolute							Total	
	Under 25	25-29	30-34	35-39	40-44	45-49	50 and Over		Not Stated
HUSBANDS									
1946....	47	124	168	116	94	51	54	—	654
1964....	20	91	148	157	137	136	192	6	887
1965....	20	111	136	154	141	113	174	3	852
1966....	38	142	167	196	169	125	230	2	1,069
1967....	36	141	156	141	159	115	180	1	929
1968....	42	152	153	147	119	112	190	—	915
WIVES									
1946....	122	149	149	103	53	46	32	—	654
1964....	70	133	133	159	145	110	131	6	887
1965....	71	54	137	148	126	98	116	2	852
1966....	108	191	170	172	145	121	161	1	1,069
1967....	05	187	133	156	135	89	122	2	929
1968....	111	186	134	145	114	90	135	—	915

For marriages dissolved in 1967 the following table shows the relative ages of husbands and wives at the time of dissolution.

**Dissolution of Marriage: Decrees Absolute, 1967  
Relative Ages of Husbands and Wives at Time of Dissolution, South Australia**

Age of Husband at Dissolution	Age of Wife at Dissolution							Total Husbands
	Under 25	25-29	30-34	35-39	40-44	45 and Over	Not Stated	
Under 25 .....	32	3	—	—	—	1	—	36
25-29 .....	63	72	5	1	—	—	—	141
30-34 .....	9	84	53	10	—	—	—	156
35-39 .....	—	21	51	50	14	5	—	141
40-44 .....	1	3	18	68	52	17	—	159
45 and over .....	—	4	6	27	69	188	—	295
Not stated .....	—	—	—	—	—	—	1	1
Total wives ...	105	187	133	156	135	211	2	929

The following table shows particulars of the number of children of marriages dissolved in 1946 and in the last five years.

**Dissolution of Marriage: Decrees Absolute, Children of the Marriage  
South Australia**

Year	Number of Children at Time of Petition							Total Dissolutions of Marriage	Total Children
	0	1	2	3	4	5	6 and Over		
1946.....	319	158	117	38	14	—	2	654	604
1964.....	260	227	205	118	48	21	8	887	1,340
1965.....	253	198	210	109	52	19	11	852	1,333
1966.....	333	247	259	139	51	22	18	1,069	1,618
1967.....	261	246	219	123	51	16	13	929	1,421
1968.....	279	213	216	117	53	22	15	915	1,415



Information collected for petitions filed under State legislation covered only living 'issue' under sixteen years of age; information collected for petitions filed under Commonwealth legislation covers living 'children of the marriage' under twenty-one years of age, which, as defined in the Act, includes also adopted children, children of the husband and wife born before marriage and children of either the husband or the wife if members of the household. As the numbers of orders absolute for dissolution granted in 1964 to 1968 include some which were granted under the old legislation, the information on children for each of these years is not strictly comparable with that of each previous year, although this lack of uniformity is becoming increasingly insignificant.

The following table shows the number of children of marriages related to duration of marriage for decrees absolute for dissolution granted in 1967.

**Dissolution of Marriage: Decrees Absolute, 1967**  
**Duration of Marriage and Children of the Marriage, South Australia**

Duration of Marriage (Years)	Number of Children at Time of Petition							Total Dissolutions of Marriage	Total Children
	0	1	2	3	4	5	6 and Over		
Under 5 .....	49	32	7	1	—	—	—	89	49
5-9 .....	81	88	50	23	4	2	—	248	283
10-14 .....	35	37	49	38	19	4	2	184	358
15-19 .....	23	39	55	25	17	1	10	170	361
20-24 .....	17	27	42	25	7	8	1	127	261
25-29 .....	22	16	12	10	4	1	—	65	91
30-34 .....	14	6	4	1	—	—	—	25	17
35-39 .....	14	1	—	—	—	—	—	15	1
40 and over .....	6	—	—	—	—	—	—	6	—
Total dissolutions of marriage .....	261	246	219	123	51	16	13	929	—
Total children ...	—	246	438	369	204	80	84	—	1,421

## **PART 7**

# **LABOUR**

## **7.1 EMPLOYMENT**

### **THE WORK FORCE**

Particulars of the number of persons constituting the work force in South Australia are available from periodic population censuses. At the 1966 Census, certain additional questions were asked in order to permit estimation of the size of the work force in accordance with the recommendations of the Eighth International Conference of Labour Statisticians. The principal effect of this new approach was to include approximately 14,600 additional persons in the work force. The major factor in this change was females working part-time, some of whom did not previously consider themselves as 'engaged in an industry, business, profession, trade or service'.

More detailed definitions of the work force and of the new questions asked at the 1966 Census are available in Census Bulletin 4.1 published by the Commonwealth Statistician.

In the following table population at the 1961 and 1966 Censuses is classified by occupational status which refers to the status of each person in his or her occupation *e.g.* employer, worker on own account, working for wages etc. Those persons reporting themselves as not engaged in an industry, business, profession, trade or service take as their occupational status 'not in the work force'.

The growth in the female proportion of the work force from 1954 to 1961 has continued so that by the 1966 Census females made up 29.0 per cent of the work force compared with 23.6 per cent in 1961. Similarly, the proportion of the female population in the work force rose from 18.6 per cent in 1961 to 23.4 per cent in 1966.

**Occupational Status of the Population, South Australia**  
Censuses 1961 and 1966

Occupational Status	30 June 1961			30 June 1966		
	Males	Females	Persons	Males	Females	Persons
In work force						
Employer .....	20,132	4,081	24,213	23,747	6,228	29,975
Self-employed ...	35,128	5,850	40,978	31,135	7,205	38,340
Employee .....	223,241	75,447	298,688	259,105	111,197	370,302
Helper .....	1,318	634	1,952	1,167	2,613	3,780
Not at work .....	8,520	3,210	11,730	(a)	(a)	(a)
Unemployed .....	(a)	(a)	(a)	4,464	3,563	8,027
Total work force	288,339	89,222	377,561	319,618	130,806	450,424
Not in work force....	201,886	389,893	591,779	228,912	412,539	641,451
Total population.	490,225	479,115	969,340	548,530	543,345	1,091,875

(a) Definitional and conceptual differences prevent derivation of figures for both Censuses.

Occupation refers to the kind of work a person normally performs e.g. carpenter, clerk, and is classified according to the Australian Classification of Occupations which has been adapted from and closely adheres to the principles embodied in the International Standard Classification of Occupations issued by the International Labour Office, Geneva 1958. It contains 11 major groupings subdivided into 72 minor groups further subdivided into 313 occupation categories. The following table shows the work force at the 1966 Census classified by occupation.

**Work Force: Occupation, South Australia, 30 June 1966**

Occupation Group	Males		Females		Persons	
	Number	Proportion of Total	Number	Proportion of Total	Number	Proportion of Total
		%		%		%
Professional, technical and related workers .....	23,834	7.46	18,652	14.26	42,486	9.43
Administrative, executive and managerial workers .....	24,280	7.60	3,094	2.36	27,374	6.08
Clerical workers .....	25,423	7.95	36,000	27.52	61,423	13.64
Sales workers .....	17,374	5.44	19,161	14.65	36,535	8.11
Farmers, fishermen, hunters, timber-getters and related workers .....	40,723	12.74	8,420	6.44	49,143	10.91
Miners, quarrymen and related workers .....	1,741	0.55	26	0.02	1,767	0.39
Workers in transport and communication occupations .....	23,274	7.28	3,046	2.33	26,320	5.84
Craftsmen, production-process workers and labourers (n.e.i.) ...	145,427	45.50	15,802	12.08	161,229	35.79
Service, sport and recreation workers	11,611	3.63	21,986	16.81	33,597	7.46
Members of armed services, enlisted personnel .....	3,432	1.07	168	0.13	3,600	0.80
Occupation inadequately described or not stated .....	2,499	0.78	4,451	3.40	6,950	1.54
Total work force ....	319,618	100.00	130,806	100.00	450,424	100.00

Industry refers to the branch of productive activity, trade or service in which the individual works or carries out his occupation. The Australian Classification of Industries divides the whole field of industry into 15 major industry groups which, in turn, are divided into 53 sub-groups and 342 individual categories.

In the next table the numbers of males and females in the work force at the 1966 Census are classified according to industry in conjunction with occupational status. The proportion of the work force engaged in primary production

declined from 22.2 per cent in 1933 to 17.9 per cent in 1947 and to 10.6 per cent in 1966. In contrast, the percentage recorded as employed in manufacturing industries rose from 15.5 in 1933 to 26.8 in 1947 and to 27.8 in 1966.

### Work Force: Industry and Occupational Status, South Australia

Census 30 June 1966

Industry Group	Employed					Not at Work	Total Work Force
	Employer	Self-Employed	Employee	Helper	Total		
MALES							
Primary production .....	8,407	16,756	12,650	809	38,622	263	38,885
Mining and quarrying .....	79	604	2,325	17	3,025	45	3,070
Manufacturing .....	2,207	1,783	96,011	73	100,074	721	100,795
Electricity, gas, water and sanitary services .....	14	19	10,726	6	10,765	40	10,805
Building and construction .....	3,137	3,965	29,084	46	36,232	687	36,919
Transport and storage .....	878	2,139	18,586	17	21,620	191	21,811
Communication .....	—	2	7,653	3	7,658	25	7,683
Finance and property .....	358	608	8,793	16	9,775	26	9,801
Commerce .....	5,355	3,492	35,609	79	44,535	326	44,861
Public authority (n.e.i.) and defence services .....	—	—	11,492	—	11,492	34	11,526
Community and business services (including professional) .....	1,807	522	17,758	46	20,133	90	20,223
Amusement, hotels and other accommodation, cafes, per- sonal services, etc. ....	1,452	1,149	7,063	33	9,697	99	9,796
Other industries .....	—	1	2	—	3	—	3
Industry inadequately described or not stated .....	53	95	1,353	22	1,523	1,917	3,440
Total males in work force	23,747	31,135	259,105	1,167	315,154	4,464	319,618
FEMALES							
Primary production .....	1,527	3,048	2,742	1,394	8,711	59	8,770
Mining and quarrying .....	6	24	128	2	160	1	161
Manufacturing .....	450	410	22,983	102	23,945	313	24,258
Electricity, gas, water and sanitary services .....	2	..	553	..	555	8	563
Building and construction .....	291	148	996	66	1,501	14	1,515
Transport and storage .....	145	170	1,809	32	2,156	15	2,171
Communication .....	..	1	2,183	..	2,184	16	2,200
Finance and property .....	40	88	5,912	17	6,057	34	6,091
Commerce .....	2,290	1,957	26,373	385	31,005	339	31,344
Public authority (n.e.i.) and defence services .....	..	..	3,510	..	3,510	31	3,541
Community and business services (including professional) .....	307	409	29,530	109	30,355	267	30,622
Amusement, hotels and other accommodation, cafes, per- sonal services, etc. ....	1,120	827	12,319	215	14,481	222	14,703
Other industries .....	..	..	1	..	1	2	3
Industry inadequately described or not stated .....	50	123	2,158	291	2,622	2,242	4,864
Total females in work force	6,228	7,205	111,197	2,613	127,243	3,563	130,806

### Work Force Survey

In addition to the complete census counts, estimates of the civilian work force are prepared each quarter. These estimates are prepared on an Australia-wide basis and separate information is not available for South Australia. The estimates are based on the results of surveys of sample households. The first surveys were conducted in June 1960 and were restricted to the six State capital cities. More recently the survey programme has been extended to non-metropolitan urban and rural areas which will enable estimates of the total Australian work force to be published.

Information yielded includes work force participation rates, *i.e.* the percentage of the total civilian population falling in a particular class who are members

of the civilian work force. Work force participation, by age and marital status, is shown in the following table for the surveys in August from 1964 to 1967.

### Work Force Participation Rates, Six Australian State Capital Cities

August	Age Group (Years)						Total Civilian Population 15 Years of Age and Over
	15-19	20-44		45-64		65 and Over	
		Married	Not Married (a)	Married	Not Married (a)		

(a) Includes never married, widowed and divorced.

### Surveys of School Leavers

Surveys designed to investigate some aspects of the work force attachment of school leavers have been conducted on an Australia-wide basis in February in recent years.

School leavers for these surveys are defined as Australian civilians in the age group fifteen to twenty-four years who had attended full-time at a school, university or other educational institution at some time during the previous year. The number of school leavers in the work force expressed as a percentage of total school leavers gives the work force participation rate. The rates for this State and for Australia are set out in the following table.

### Work Force Attachment of School Leavers

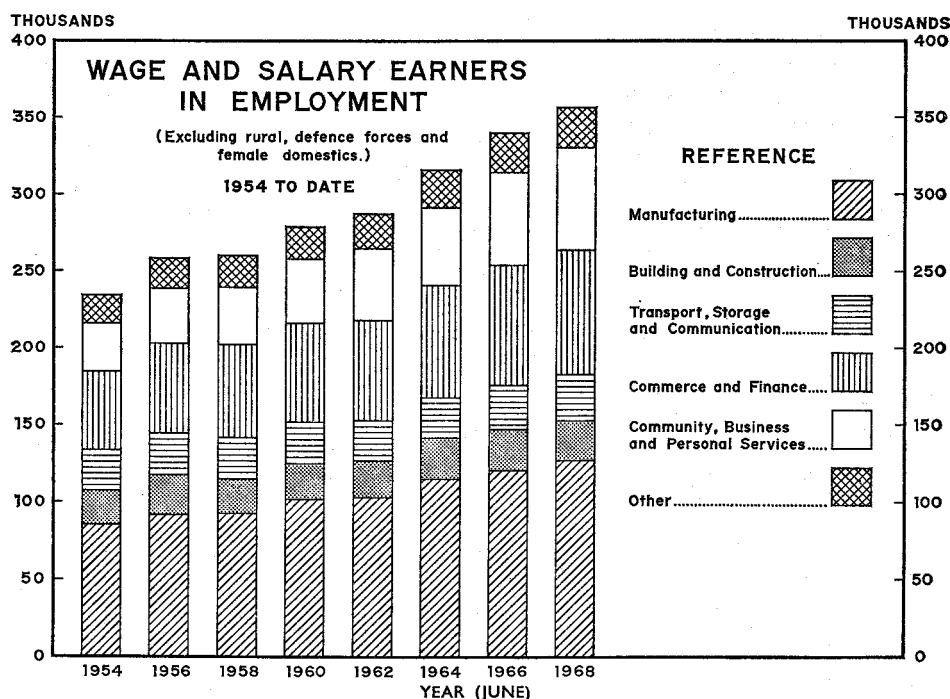
February	South Australia			Australia		
	Total in Work Force	Total Leavers	Work Force Participation Rate	Total in Work Force	Total Leavers	Work Force Participation Rate
	'000		%	'000		%
MALES						
1964 ...	7.7	8.0	96.3	84.7	87.6	96.7
1965 ...	8.9	9.3	95.7	80.2	83.3	96.3
1966 ...	9.7	10.3	94.2	85.7	88.7	96.6
1967 ...	7.7	7.9	97.5	79.9	85.0	94.0
FEMALES						
1964 ...	7.9	8.6	91.9	67.6	78.2	86.4
1965 ...	6.7	7.3	91.8	70.2	79.6	88.2
1966 ...	7.6	9.1	83.5	75.3	84.8	88.8
1967 ...	7.9	8.9	88.8	74.6	82.4	90.5
PERSONS						
1964 ...	15.6	16.6	94.0	152.4	165.8	91.9
1965 ...	15.5	16.6	93.4	150.4	162.9	92.3
1966 ...	17.3	19.4	89.2	161.0	173.5	92.8
1967 ...	15.7	16.8	93.5	154.5	167.4	92.2

Further details of age distribution, industry and occupation of school leavers and time of leaving school are published in Statistical Publication 6.9, *Survey of Leavers From Schools, Universities or Other Educational Institutions* published by the Commonwealth Statistician.

### WAGE AND SALARY EARNERS IN EMPLOYMENT

Details of the number of wage and salary earners in civilian employment other than at census dates are available from periodic estimates. These estimates, which exclude employees in rural industry and private domestic service, are based on information obtained at the 1954 and 1961 Censuses, known as bench-marks, with adjustments to these bench-marks being made from certain current information. They are not directly comparable with statistics derived from the 1966 population census. A new series of estimates for June 1966 and subsequent months, and based on 1966 census bench-marks, is to be published as soon as possible. The new series will include a larger number of persons in the work force because of the more inclusive nature of the definitions used at the 1966 Census (see page 268).

An industry distribution of wage and salary earners derived from these estimates, and beginning with the census year 1954, is presented in the following bar chart.



Estimated employment for June in the years 1964 to 1968 classified by industry group, is given in the following table. 'Manufacturing' includes employees of manufacturing enterprises who are not directly associated with the productive process, such as sales and distribution personnel. The category 'community, business and personal services' covers employees in education, health, amusement, hotels and restaurants, and professional and personal services but excludes female private domestics.

Wage and Salary Earners in Employment<sup>(a)</sup>, South Australia

June	Manufacturing	Building and Construction	Transport, Storage, and Communication	Commerce and Finance	Community, Business and Personal Services	Other	Total Employment
MALES ('000)							
1964.....	94.5	25.5	23.5	44.4	20.8	20.7	229.4
1965.....	99.3	26.6	24.2	46.6	22.1	21.1	239.9
1966.....	98.4	25.9	24.8	47.8	23.4	21.9	242.1
1967.....	99.0	25.0	24.7	48.0	24.3	22.3	243.2
1968.....	103.4	24.9	25.2	48.3	25.7	22.6	250.0
FEMALES ('000)							
1964.....	20.0	0.3	3.2	27.4	31.9	3.2	86.0
1965.....	21.9	0.4	3.4	29.9	34.2	3.6	93.4
1966.....	22.2	0.5	3.5	30.9	36.7	3.8	97.7
1967.....	22.1	0.5	3.7	31.5	38.0	3.9	99.7
1968.....	23.6	0.6	3.7	32.8	41.2	4.0	106.0
PERSONS ('000)							
1964.....	114.6	25.8	26.7	71.8	52.7	23.9	315.5
1965.....	121.2	27.0	27.6	76.4	56.3	24.8	333.3
1966.....	120.7	26.3	28.4	78.7	60.1	25.7	339.8
1967.....	121.1	25.6	28.3	79.5	62.2	26.3	342.9
1968.....	127.1	25.6	28.9	81.1	66.9	26.6	356.0

(a) Excludes employees in rural industry female private domestics and defence forces.

Government and semi-government departments or authorities employ over 25 per cent of total civilian wage and salary earners. The following table shows the distribution of wage and salary earners at June 1967 and June 1968 by class of employer.

Wage and Salary Earners in Employment<sup>(a)</sup>: Class of Employer  
South Australia

Class of Employer	June 1967			June 1968		
	Males	Females	Persons	Males	Females	Persons
'000						
Private .....	170.1	76.7	246.8	175.5	81.6	257.1
Government (b)						
Commonwealth ..	22.3	5.2	27.5	22.3	5.3	27.7
State .....	46.3	17.2	63.5	47.7	18.5	66.2
Local .....	4.5	0.5	5.0	4.5	0.6	5.1
Total government	73.1	23.0	96.1	74.5	24.4	98.9
Total employment	243.2	99.7	342.9	250.0	106.0	356.0

(a) Excludes employees in rural industry, female private domestics, and defence forces.

(b) Includes employees, within Australia, of government bodies (Commonwealth, State, local and semi-government) on services such as railways, tramways, banks, post office, air transport, education (including universities), broadcasting, television, police, public works, government factories and munitions establishments, government hospitals and institutions, migrant hostels, etc., as well as administrative employees.

Further information on employment in specific sectors such as factories, rural industries, the building industry, etc. is found in the relevant sections.

## UNEMPLOYMENT

At the 1966 Census the definition of 'unemployed' was taken from the Eighth International Conference of Labour Statisticians. The new concept includes as unemployed those who, in the week prior to the Census, were actively looking for work and those who had been temporarily laid off by their employer without pay for the whole of that week. The term 'not at work' used in the 1947, 1954 and 1961 Censuses, therefore, is not comparable with the 1966 approach. The count of persons unemployed in South Australia at the 1966 Census was 4,464 males and 3,563 females.

Monthly figures compiled by the Department of Labour and National Service from the operations of the Commonwealth Employment Service provide indicators of movement in the level of unemployment. The Department makes a count of the number of persons, registered with the Employment Service for employment on the Friday nearest the end of the month, who claimed at the time of registering that they were not employed, and who were still recorded as unplaced. Included are persons who have been referred to employers and those who may have obtained employment without notifying the Department. Also available is the number of vacancies, registered by employers, which were recorded as unfilled at the end of the month.

In the table below the number of persons and vacancies registered at the end of each month are shown for the years 1964 to 1968.

Registration with Commonwealth Employment Service, South Australia<sup>(a)</sup>

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>Year:</b>	<b>PERSONS REGISTERED FOR EMPLOYMENT (b) ('000)</b>											
1964.....	6.5	5.3	4.5	4.5	4.4	4.3	4.2	3.5	3.1	5.7	2.9	4.8
1965.....	5.5	4.6	3.4	3.3	3.4	3.5	3.6	3.4	3.4	3.6	3.7	6.1
1966.....	7.6	6.8	6.5	6.0	6.7	7.4	7.2	7.3	7.1	6.7	6.5	8.5
1967.....	10.7	9.3	7.9	8.2	8.4	8.5	8.5	8.0	6.9	6.1	6.2	10.3
1968.....	11.4	9.0	8.3	8.1	8.2	8.4	8.0	7.1	6.2	5.7	6.0	9.1
	<b>VACANCIES REGISTERED ('000)</b>											
1964.....	4.0	4.3	4.2	3.9	3.7	3.4	3.3	3.9	4.7	5.3	6.0	6.0
1965.....	5.8	5.7	5.0	4.6	4.1	4.4	4.0	3.8	4.4	4.5	4.5	4.7
1966.....	3.6	3.1	2.4	2.1	1.9	1.5	1.6	1.7	2.5	2.9	3.3	3.4
1967.....	2.9	2.5	1.7	1.7	1.6	1.3	1.4	1.7	1.9	2.2	2.1	3.7
1968.....	3.1	2.1	2.0	1.8	1.8	1.6	1.7	1.8	2.1	2.4	2.4	3.8
	<b>EXCESS OF PERSONS OVER VACANCIES ('000)</b>											
1964.....	2.5	1.0	0.3	0.6	0.8	0.9	0.9	-0.4	-1.6	0.4	-3.1	-1.2
1965.....	-0.3	-1.1	-1.6	-1.3	-0.7	-0.8	-0.4	-0.4	-0.9	-0.9	-0.7	1.5
1966.....	4.0	3.7	4.0	4.0	4.9	5.9	5.6	5.7	4.6	3.8	3.2	5.0
1967.....	7.8	6.9	6.2	6.6	6.2	7.1	7.1	6.4	5.1	3.9	4.2	6.6
1968.....	8.3	6.9	6.3	6.3	6.4	6.8	6.3	5.3	4.1	3.3	3.7	5.3

(a) Includes Northern Territory. b) Persons who claimed they were unemployed.

One of the primary functions of the Work Force Survey (see page 270) is to provide regular and detailed information on unemployment in Australia. Separate details for South Australia are not available and published estimates to date have been restricted to the six State capital cities.

In the following table unemployment rates are shown by industry group for the six capitals from 1963 to 1967. The unemployment rate is that percentage of the civilian work force aged fifteen years and over who are currently unemployed and looking for work or who are laid off without pay.



Unemployment Rates<sup>(a)</sup>, Six Australian State Capital Cities

Industry Group in which Last Employed	August				
	1963	1964	1965	1966	1967
	Per cent				
Manufacturing.....	1.6	0.9	1.1	1.4	1.4
Building and construction .....	1.8	0.8	0.8	1.4	2.1
Transport, storage and communication .....	1.0	0.9	0.8	1.1	0.9
Commerce .....	1.4	0.9	1.2	1.5	1.4
Public authority (n.e.i.), community and business services (including professional) .....	1.1	0.6	0.6	1.0	1.1
Amusements, hotels and other accommodation, cafes, personal services, etc. ....	1.6	1.6	1.8	1.6	1.3
Other industries.....	1.5	0.6	0.7	1.1	1.2
All industries combined.....	1.4	0.9	1.0	1.3	1.3

(a) Excludes unemployed persons who had not previously been employed.

In the following table unemployment rates are shown according to age and marital status.

Unemployment Rates<sup>(a)</sup>, Six Australian State Capital Cities

August	Age Group (Years)						Total Civilian Population 15 Years of Age and Over
	15-19	20-44		45-64		65 and Over	
		Married	Not Married (b)	Married	Not Married (b)		
				Per cent			
				MALES			
1963.....	2.0	0.6	2.0	1.0	4.6	1.5	1.3
1964.....	1.4	0.4	1.2	0.3	1.7	1.3	0.7
1965.....	1.8	0.7	0.9	0.7	1.4	2.1	0.9
1966.....	2.6	0.8	1.6	0.8	2.7	1.2	1.2
1967.....	3.0	0.7	2.1	0.8	2.3	1.2	1.2
				FEMALES			
1963.....	3.0	2.5	1.6	1.1	1.6	2.4	2.1
1964.....	1.5	2.3	0.9	1.0	0.7	1.0	1.5
1965.....	1.8	2.2	0.8	1.2	0.4	—	1.5
1966.....	2.5	2.3	1.6	1.4	1.3	1.9	2.0
1967.....	2.4	2.1	1.1	1.5	1.1	1.9	1.8

(a) Includes unemployed persons who had not previously been employed.

(b) Includes never married, widowed, and divorced.

Details of the duration of unemployment are also obtained in the Work Force Survey. The pattern of this duration in recent years is shown in the following table.

**Duration of Unemployment<sup>(a)</sup>, Six Australian State Capital Cities**

August	Number Unemployed	Proportion Unemployed for—			
		Less than 1 month	1 month and less than 3 months	3 months and over	Total
	'000	Per cent			
1963.....	40.4	36.0	27.5	36.5	100.00
1964.....	25.4	53.2	22.4	24.4	100.00
1965.....	30.1	60.7	26.8	12.5	100.00
1966.....	41.3	56.5	23.2	20.3	100.00
1967.....	41.4	54.7	24.1	21.2	100.00

Note: Figures for periods prior to August 1966 relate to persons 14 years of age and over; from August 1966 they relate to persons 15 years of age and over.

(a) Includes unemployed persons who had not previously been employed.

**EMPLOYMENT SERVICES**

Prior to 1946 the South Australian Government Labour Exchange was responsible for assisting persons seeking employment and employers seeking labour. In addition the Exchange acted as the employer of State Government labour. The central office of the Exchange was in Adelaide, with a branch office at Port Adelaide, and with police stations acting as local agents elsewhere.

The Commonwealth Employment Service commenced operations in South Australia in May 1946, superseding the State Exchange. The main functions of the Employment Service are to assist people seeking employment to obtain positions best suited to their training, experience, abilities and qualifications; and to assist employers seeking labour to obtain employees best suited to the demands of the employers' particular class of work.

Specialised facilities are provided for young people, persons with physical and mental handicaps, ex-members of the defence forces, migrants, rural workers, and persons with professional and technical qualifications. In 1968 the scope of assistance available to Aborigines was widened with the creation of a position specifically to deal with all aspects of the employment of Aborigines including liaison with State Government and private organisations working in this field. Vocational guidance is provided without charge by qualified psychologists. It is available to any person, but is provided particularly for young people and handicapped persons.

The Commonwealth Employment Service is responsible for placing in employment migrant workers sponsored by the Commonwealth under the Commonwealth Nomination and similar schemes. This includes arranging for them to move to their initial employment and for their admission, if necessary, to Commonwealth migrant hostels. Experts for overseas service under technical aid programmes are recruited by the Employment Service.

Before unemployment benefit can be paid, persons seeking such benefit must be registered with the Employment Service which is responsible for certifying that suitable employment is not available.

In association with placement activities, regular surveys of the labour market are carried out. These include a monthly survey of employment in larger private factories covering practically all private factories with 100 or more employees and a large section of those with between 50 and 100 employees. The results of this survey give an earlier indication of current monthly trends in private factory employment than is available from any other source. A survey of the level of overtime and/or short-time being worked in a similar but slightly smaller sample of factories is conducted concurrently with this survey.

The Department of Labour and National Service operates eight Commonwealth Employment Service offices in the metropolitan area including one at Elizabeth, and has offices at Gawler, Mount Gambier, Port Augusta, Port Lincoln, Port Pirie, Renmark and Whyalla. Agents of the Employment Service are located in other centres. The South Australian Regional Office of the Department of Labour and National Service is also responsible for district offices at Alice Springs and Darwin in the Northern Territory. A Professional Employment Office in Adelaide specialises in placement of the more highly qualified and professional applicants.

There are also a number of private employment agencies, all of which are required to register with the State Department of Labour and Industry. During 1966 amendments were made to the Employees Registry Offices Act resulting in the definition of private employment agencies being broadened to include a larger range of higher level, professional and executive appointments. At 31 December 1968 there were twenty-seven agencies registered.

## 7.2 ARBITRATION AND INDUSTRIAL ORGANISATIONS

### INDUSTRIAL ARBITRATION

In Australia a unique system of conciliation and arbitration by Government-established tribunals has been developed, with the Commonwealth Parliament and the State Parliaments each passing its own industrial legislation.

Under Section 51 of the Commonwealth Constitution the Commonwealth Parliament may make laws in relation to 'conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State'. In addition the Commonwealth may legislate under certain industrial powers for the stevedoring and maritime industries, the Commonwealth Public Service, and certain Commonwealth projects.

Commonwealth arbitration binds only the parties to a dispute, and decisions need not be of general application to an industry. Employees not specifically covered by Commonwealth awards are subject to State industrial jurisdiction. Where an award or determination of a State industrial tribunal is in conflict with an award of a Commonwealth tribunal, the latter prevails.

Although constitutionally limited, Commonwealth jurisdiction has been assisted by interstate ties of industry and trade unions, and is today the predominant influence in employer-employee relations.

#### Commonwealth Industrial Tribunals

Prior to 1956, a Court of Conciliation and Arbitration was responsible for the prevention and settlement of industrial disputes extending beyond the limits of any one State. However in 1956 substantial amendments were made to the Conciliation and Arbitration Act separating the judicial and arbitral functions of the Court, by the establishment of the Commonwealth Industrial Court and the Commonwealth Conciliation and Arbitration Commission.

The Industrial Court performs the judicial functions of the former Arbitration Court. It interprets and enforces awards, passes judgment on questions of law and determines questions arising in relation to organisations registered under

the Act. The Court is composed of a Chief Judge and five other Judges. Jurisdiction is exercised by a single Judge when dealing with dismissal or injury of an employee on account of industrial action, interpretation of awards, questions concerning membership of an organisation, disputes between an organisation and its members, and a prescribed matter of practice or procedure. In all other cases jurisdiction is exercised by not less than two Judges. Acts and judicial proceedings of the Court are recorded, and the Court has power to punish contempt of its authority. In general, decisions of the Industrial Court are final, however, in certain matters an appeal lies to the High Court but only by leave of the High Court.

The Commonwealth Conciliation and Arbitration Commission at present comprises a President, five Deputy Presidents, a Senior Commissioner, thirteen Commissioners, and three Conciliators. Inquiries into basic wages, standard hours, and long service leave must be dealt with by the Commission in Presidential Session, *i.e.*, constituted by at least three presidential members. Other matters are generally dealt with by individual Commissioners who are assigned to particular industries or industry groups. A presidential member of the Commission deals with matters in the maritime and stevedoring industries. Conciliators assist in the reaching of agreement but have no power to impose compulsory arbitration.

When an industrial dispute occurs or is considered likely to occur, a Commissioner allocated to the industry takes steps for the prompt settlement of the dispute by conciliation or, if in his opinion conciliation is unlikely to succeed or has failed, by arbitration. In seeking agreement he may obtain the services of a Conciliator, and must obtain such assistance when requested by one of the parties. If agreement is reached, the terms of the agreement are recorded and may be certified by the Commission. A certified agreement has the same effect as an award made by a Commissioner. Upon application by one of the parties, the President may, if he considers it in the public interest, direct the Commission constituted by not less than three members, at least one of whom shall be a presidential member, to hear the matter in dispute.

An appeal may be lodged against awards and certain decisions made by a Commissioner if in the opinion of the Commission the matter is of such importance that in the public interest an appeal should lie. Such appeals are heard by the Commission consisting of not less than three members of whom at least two are presidential members.

The Conciliation and Arbitration Act was amended in 1967 to enable the establishment of a tribunal to handle industrial disputes involving crews of civil aircraft. As a consequence the Flight Crew Officers Industrial Tribunal came into existence in November, 1967.

Conditions in the Commonwealth Public Service are normally regulated by the Public Service Arbitrator. However, where the Arbitrator refrains from hearing or determining a claim, or gives his consent to such action, a claim on behalf of Commonwealth employees may be submitted to the Commission.

### **State Industrial Tribunals**

South Australia was a pioneer in State intervention in industrial relations. 'A Bill to Facilitate the Settlement of Industrial Disputes' was introduced in State Parliament in 1890. It was, however, four years before a modified version setting up Boards of Conciliation was enacted. An Industrial Court was established in 1912 and was later incorporated in the system of tribunals created by the Industrial Code of 1920.

The Industrial Court usually consisted of a President and Deputy President, both appointed from legal practitioners of at least ten years standing. Normally the court was constituted by one of these officers, but certain matters were traditionally determined by a full court comprising both officers. The function of the court was to make awards concerning wages and conditions of employment for workers who were outside the jurisdiction of the industrial boards. It had authority to adjudicate in cases of strikes or lockouts and could summon persons to compulsory conferences and hear appeals from determinations of industrial boards.

The Board of Industry comprised the President or Deputy President of the Industrial Court and four commissioners. The functions of the Board were to recommend the creation or dissolution of industrial boards and to determine their ambit; to adjudicate on demarcation disputes; and to fix prices of commodities under the Fair Prices Act, 1924, if some manipulative control was shown. Prior to 1950 the Board of Industry also conducted periodic enquiries to fix a State 'living wage', but subsequently the wage has been fixed by government proclamation.

Industrial Boards, consisting of a chairman and an equal number of employer and employee representatives, were set up by the Minister of Labour and Industry upon the recommendation of the Board of Industry. Each industrial board made determinations concerning wages and conditions of employment for workers within its particular industry group. The jurisdiction of most boards was confined to the metropolitan area, although in the case of government and local government employees, determinations generally applied to the whole State.

The Industrial Code, 1967-1969 now provides for the Industrial Court, an Industrial Commission and Conciliation Committees.

Amendments made to the Industrial Code during 1966 established the Industrial Commission of South Australia which, in general, has the same award making powers as the Industrial Court previously had. The President of the Industrial Court became President of the Commission and in addition is the sole Judge of the Industrial Court. (The Court deals only with legal matters). In effect, the arbitral functions of the Industrial Court, which were constituted by a President and not more than two Deputy Presidents, are now exercised by the Commission as constituted by the President and two Commissioners (Full Commission) or by any one of them, as directed by the President. Although the President must be a person eligible for appointment as a Judge of the Supreme Court, the two Commissioners, who are appointed by the Governor, are not required to have legal qualifications. The Act provides that one must be experienced in industrial affairs through association with employers' interests, and the other must have similar experience by having been associated with trade union affairs.

The Industrial (or Wages) Boards which had operated since 1920, were reconstituted as Conciliation Committees with one of the Commissioners as chairman. Committees are appointed by the Minister of Labour and Industry on the recommendation of the President, for a three-year term. The Committees have the same jurisdiction in industrial matters as the Commission. If the process of conciliation before a committee fails, then the chairman sits as a Commissioner to determine the unresolved matters. The awards of the Committees operate as common rules in the industries concerned, but the awards of the Commission are binding only on the parties before the Commission unless the Commission makes an order declaring the award a common rule.

Provision is made for a Commissioner, whether dealing with a matter as Commissioner or as Chairman of a Conciliation Committee, to consult with the

President as to whether a matter should be dealt with by the Full Commission and he is required to so consult with the President on the application of any party to an industrial matter before him.

There is a right of appeal against awards and decisions of a Commissioner or of a Conciliation Committee. As one Commissioner is the Chairman of each Conciliation Committee a provision is included to enable the appeal to be heard by a bench of three, viz the President, the Commissioner not concerned in the matter which is the subject of the appeal, and the Industrial Registrar. This tribunal is described as the Commission in Appeal Session.

Power is given to the President, a Commissioner or the Industrial Registrar to hear claims for the recovery of sums due under awards or registered agreements, but there is no power to award costs against either party. Where the amount of the claim exceeds \$60 there is an appeal to the President. Judgments are enforceable in the same manner as judgments of the Local Court.

The Board of Industry was abolished in 1966, its functions (with the exception of demarcation disputes) being taken over by the Industrial Commission. Demarcation disputes are now dealt with in the same manner as an application for an award.

As the arbitration system now stands, it consists of:

- (1) the Industrial Court which deals with matters of law;
- (2) the Industrial Commission which makes awards covering workers not under the jurisdiction of conciliation committees, hears claims for the recovery of sums due under awards or agreements, deals with demarcation disputes and hears appeals from decisions of commissioners or conciliation committees;
- and
- (3) Conciliation Committees, which comprise a Commissioner and equal representations of employer and employee interests, and have the same jurisdiction to make awards as the Commission except that they cannot determine annual salaries, and generally have a geographical area of operation which is restricted to the metropolitan area (except as regards government or local government employees).

Proceedings against persons or organisations breaching an award are heard in a Court of Summary Jurisdiction although where a question of law is involved the matter may be referred to the Industrial Court.

### EMPLOYEE ORGANISATIONS

Early employee organisations in South Australia included the Progressive Society of Carpenters and Joiners, formed in the mid-1840s, and the Adelaide Branch of the Amalgamated Society of Engineers, founded some twenty years later in 1864. These societies were basically craft unions and it was not until 1870 that an industrial union open to all members in an industry, viz the Railway Service Mutual Association, was formed. Associations of waterfront employees, shop assistants, blacksmiths and saddlers emerged in 1873, and general acceptance of the eight-hour day was secured in the same year.

One of the problems facing early unions was the absence of legal recognition but in 1876 South Australia became the first State to legislate in this field. The Trade Union Act, 1876 recognised unions as lawful bodies capable of holding property.

The Adelaide Trades and Labor Council, the first delegates society, held its inaugural meeting in January 1884 and in the following year reported eleven incorporated societies. At the beginning of 1890, twenty-nine unions were recorded in South Australia. The maritime strike and other labour unrest of the early 1890s led to the establishing of a further twenty-eight known unions in the three years 1890 to 1892.

There are today over 130 separate unions operating in South Australia. Although a number of unions exist only in this State, branches of interstate or federated unions account for the majority of total membership. Some of these are bound under a system of unification with centralised control while others are practically independent and self-governing, the federal bond existing only for limited specified purposes.

The central labour organisation for the State is the United Trades and Labor Council of South Australia, and combined union councils exist for Leigh Creek, Mount Gambier, Peterborough, Port Augusta, Port Lincoln, the Upper Murray and Whyalla. These central organisations, together with individual unions are affiliated with the Australian Council of Trade Unions. All major unions are affiliated with the Council, which was founded at an All-Australian Trade Union Congress in 1927. The Trades and Labor Council is the State branch of the A.C.T.U. and has the right to appoint one representative to act on the executive of the council.

The following table gives particulars of the number of separate unions and union membership for the years 1963 to 1967. The table includes estimated percentages of trade union members to total wage and salary earners in employment. The estimates of total wage and salary earners have been calculated by adding estimates of rural and private domestic employees based on census results to estimates of wage and salary earners which normally exclude rural and private domestic employees. For this reason and because trade union membership includes some persons not in employment, the percentages shown in the table must be regarded as approximations.

### Trade Unions, South Australia

*At 31 December*

Year	Separate Unions	Members			Proportion of Members to Total Wage and Salary Earners		
		Males	Females	Persons	Males	Females	Persons
	No.	'000	'000	'000	%	%	%
1963.....	134	136.6	24.5	161.1	58	28	50
1964.....	137	141.4	25.5	166.9	58	27	50
1965.....	137	146.7	27.3	174.0	58	28	50
1966.....	136	149.9	28.6	178.5	59	28	50
1967.....	133	151.9	30.3	182.2	59	29	50

In the next table unions and membership have been classified under broad industrial groupings. Where the members of a union are employed in a number of industries they have been classified to the predominant industry. The classification 'other' includes rural industry, mining and quarrying, banking, insurance and clerical, wholesale and retail trade, amusement, hotels and community and business services.

**Trade Unions: Industry Groups, South Australia**  
**At 31 December**

Year	Manu- facturing	Building and Con- struction	Transport	Public Authority (n.e.i.)	Other	Total
NUMBER OF SEPARATE UNIONS						
1963....	41	7	18	37	31	134
1964....	42	7	20	38	30	137
1965....	42	7	20	37	31	137
1966....	41	6	20	37	32	136
1967....	40	6	20	36	31	133
NUMBER OF MEMBERS ('000)						
1963....	59.9	10.7	19.0	35.7	35.8	161.1
1964....	60.8	11.7	18.9	37.4	38.1	166.9
1965....	63.1	11.6	19.3	40.9	38.9	174.0
1966....	65.6	11.0	19.5	41.7	40.7	178.5
1967....	64.4	11.0	19.5	43.9	43.4	182.2

### EMPLOYER ORGANISATIONS

In industrial matters, the South Australian Employers' Federation Inc., founded in 1889, and the South Australian Chamber of Manufactures, established twenty years earlier in 1869, are the dominant employer organisations. These two organisations provide industrial services for the majority of South Australian employers and employer groups.

The Employers' Federation is an incorporated body being largely a federation of employer associations, although provision is made for individual membership. In 1967 there were thirty-six affiliated associations encompassing some 7,000 employers, and approximately 1,000 individual members. The federation is maintained by fees paid by members, together with charges made for industrial actions, and from secretarial charges from member associations for which the federation acts as secretariat. A council, which contains a representative from each of the member associations, is elected annually, and an executive is elected by the council. Services provided include the negotiating and drafting of industrial agreements, and the preparation and presentation of cases before Commonwealth and State industrial tribunals. Advice is provided on existing awards and determinations, and on various aspects of industrial legislation.

The Chamber of Manufactures, formed originally to promote the products of South Australia, established an industrial department in 1940-41, and has since accepted increasing responsibility for representing employers' interests in the fixing of wages and the determination of employment conditions, both in State and Commonwealth jurisdictions. The chamber has over 3,000 members organised, where possible, into more than fifty trade sections. Administration is by a council of some 130 members representative of industry groups and trade sections, which in turn elect an executive of six members. In addition to industrial matters, the chamber secretariat draws attention to proposals before the State and Commonwealth Parliaments, proposals of local government authorities, matters before the Tariff Board, and regulations of government departments and instrumentalities which could or do affect member companies.



# INDUSTRIAL DISPUTES

Details of the number and extent of industrial disputes occurring in South Australia are shown in the next table. Effects on other establishments because of lack of materials, disruption of transport services, power cuts, etc. are not included in these statistics. Particulars of all disputes in progress during the year are included in the annual figures. Consequently, details of the number of disputes and of workers involved in the disputes which commenced in any year, and were still in progress during the following year, are included in the figures for both years. Working days and wages lost are included in the appropriate year. Workers involved in more than one dispute during the year are counted once for each dispute.

## Industrial Disputes<sup>(a)</sup>, South Australia

Period	Disputes	Workers Involved			Working Days Lost	Estimated Loss in Wages
		Directly	Indirectly (b)	Total		
						\$'000
Annual Averages						
1951-55 .....	30	17,376	402	17,778	50,472	310.0
1956-60 .....	24	12,820	16	12,836	22,352	157.4
1961-65 .....	39	18,374	172	18,546	25,995	234.6
Year						
1964 .....	55	22,851	189	23,040	62,785	585.2
1965 .....	48	28,323	143	28,466	26,379	253.3
1966 .....	42	8,697	63	8,760	20,903	199.7
1967 .....	55	17,351	96	17,447	18,691	199.0
1968 .....	83	38,011	1,407	39,418	51,082	514.6

(a) Disputes involving a stoppage of work of ten man-days or more.

(b) Persons thrown out of work at the establishment where the stoppages occurred but not themselves parties to the dispute.

In the following table industrial disputes occurring during 1967 and 1968 are classified by industry groups.

## Industrial Disputes<sup>(a)</sup>: Industry Groups, South Australia

Industry Group	1967				1968			
	Disputes	Workers Involved (b)	Working Days Lost	Estimated Loss in Wages	Disputes	Workers Involved (b)	Working Days Lost	Estimated Loss in Wages
				\$'000				\$'000
Engineering, metals, vehicles, etc. ....	30	10,806	11,267	121.0	28	17,049	19,970	209.2
Food, drink and tobacco .....	—	—	—	—	1	30	30	—
Paper, printing etc. ....	2	350	1,162	16.2	—	—	—	—
Other manufacturing .....	5	915	1,311	14.2	8	2,895	7,061	79.1
Building and construction .....	5	1,437	939	9.4	11	1,179	1,485	16.4
Railway and tramway services. ....	1	1,830	2,120	17.6	4	7,853	9,208	79.6
Road and air transport .....	2	155	159	1.9	3	245	307	3.0
Stevedoring .....	8	1,592	1,539	16.5	23	7,294	4,456	46.0
Other industries (c) .....	2	362	194	2.3	5	2,873	8,565	81.3
Total .....	55	17,447	18,691	199.0	83	39,418	51,082	514.6

NOTE: A dispute involving workers in more than one industry group is counted once only and is included in the industry group which has the largest number of workers involved. Other details are allocated to their respective industry groups.

(a) Disputes involving a stoppage of work of ten man-days or more.

(b) Includes workers indirectly involved.

(c) Includes Communication; Finance and property; Wholesale and retail trade; Public authority (n.e.i.) and Community and business services.

## 7.3 WAGES AND HOURS

### WAGES

Prior to the National Wage Cases of 1967, wages as determined by Commonwealth and State industrial authorities consisted of two distinct elements; a basic or living wage to which was added margins and loadings reflecting various features of employee activity. For a more detailed description of these elements see *South Australian Year Book* 1967, pages 253 and 257-8.

The Total Wage concept was accepted by the decision of the Conciliation and Arbitration Commission in June 1967. The application of this concept, referred to on page 285, should limit to one the number of national wage cases in any year and provides the Commission with a flexible basis for future decisions.

### Commonwealth Wages Fixation

The *Conciliation and Arbitration Act* 1904-1968 gives the Conciliation and Arbitration Commission power to make an award or to certify an agreement 'altering the basic wage for adult males (or females) (that is to say, that wage, or that part of a wage, which is just and reasonable for an adult male [or female], without regard to any circumstance pertaining to the work upon which, or the industry in which, he is employed) or the principles upon which it is computed'. The Commission holds wage inquiries from time to time with its findings applicable to industrial awards within its jurisdiction.

Although the basic wage was originally interpreted as the minimum wage necessary to maintain an employee and his family, it is now generally accepted 'that the wage should be fixed at the highest amount which the economy can sustain and that the "dominant factor" is the capacity of the community to carry the resultant wage levels'<sup>(1)</sup>.

The first basic wage judgment was given in 1907. The rate declared, in what became known as the Harvester Judgment, was 42s (\$4.20) per week for Melbourne; the amount being considered reasonable for a 'family of about five'. The 'Harvester' standard, adjusted for retail price variations, continued to be the theoretical basis of the basic wage until 1937. In that year a new concept known as 'prosperity loadings' was introduced.

A prosperity loading independent of price movements and based on the capacity of the economy to pay was added to the wage assessed on the existing needs basis. The first prosperity loading for Adelaide was 40 cents, with separate loadings for provincial towns. In the 1949-50 basic wage hearing the prosperity loading was standardised at 50 cents and made adjustable with the rest of the wage.

In 1953 the Court granted an employers application for the deletion of quarterly adjustments on the grounds that the basic wage was based on capacity of the economy to pay and it would therefore be wrong to tie wage increases to price movements which were not necessarily related to capacity to pay. It was suggested instead that the basic wage be reviewed every twelve months. Union applications for the reintroduction of quarterly adjustments at subsequent hearings have been unsuccessful.

The Commonwealth Conciliation and Arbitration Commission agreed in 1961 to review the basic wage annually in the light of movements in the Consumer Price Index and in addition to conduct a general review of the economy, including productivity increases, every three to four years.

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<sup>(1)</sup> Commonwealth Arbitration Reports, Vol. 77, p. 494.

In June 1965 the Commission decided to abandon the established practice of making separate adjustments to the basic wage and margins, in favour of a simultaneous annual review of the basic wage and margins.

In July 1966 the Commission increased basic wage rates and called for a report from the commissioner assigned to the metal industries concerning the classifications of work and marginal rates contained in the Metal Trades Award making provision for an interim report if the commissioner thought fit. In addition the Commission announced its intention of providing interim relief to low wage earners by inserting in awards a provision prescribing a minimum wage. The minimum wage for adult male employees working the ordinary hours of work prescribed in awards was directed to be the appropriate basic wage plus \$3.75 per week.

After an extensive inquiry into secondary industry, the Full Bench of the Commission announced its decision in the Metal Trades Award case on 11 December 1967. Most workers under this award were to receive increases of between 10c and \$10.05 per week from the first pay period beginning on or after 22 January 1968, with adult females to receive 75 per cent of the appropriate increases for males. The application of this award resulted in considerable industrial unrest as unions sought to avoid the absorption of the additional margins into existing over-award payments. The Arbitration Commission therefore decided on 22 February 1968 that only 70 per cent of the rises granted should be payable immediately. However on 6 August 1968, after the Full Bench had reviewed the National Wage Case, the Commission announced that the 30 per cent deferred increase should be paid from the first pay period after 21 August.

On 5 June 1967 the Full Bench of the Commonwealth Arbitration Commission decided to dispense with the separation of wages into basic rates, margins for skill and prosperity loadings and to accept the Total Wage concept instead. As well as the Total Wage policy the Commission had thus indicated a discontinuance of separate wage variations for males and females.

In the 1968 National Wage Case the Full Bench of the Commission unanimously rejected alternative union claims for (a) a restoration of the basic wage and margins for skill system of fixing wage rates including the re-introduction of automatic quarterly cost of living adjustments, or failing this (b) a \$7.70 increase in all adult weekly total wage rates and in the minimum wage. The decision retaining the Total Wage concept and ordering a \$1.35 rise for adult males and females with a corresponding increase in the minimum wage payable was announced on 4 October 1968. The increase and the resulting minimum wage (\$38.40 for adult males, \$38.90 at Whyalla and Iron Knob) were to operate from the first pay period beginning on or after 25 October 1968. Proportionate increases for junior employees including apprentices were stipulated and the Commission indicated that the increase was to flow through to all Federal awards. A historical summary of wage rates in South Australia appears in the table on page 605.

A more detailed account of the history of Commonwealth wage fixation was included on pages 257-60 of *South Australian Year Book* 1968.

### State Living Wage

The minimum weekly wage payable under an award or determination of a State industrial tribunal is known as the 'living wage' and, according to the Industrial Code 1967-1969, is a sum sufficient for the 'normal and reasonable needs of the average employee'.

Although living wages of \$4.20 and \$4.80 per week were recorded in 1908 and 1913 respectively, these were of limited application, being restricted to the two awards in which they appeared. The first living wage with general application was awarded by the Industrial Court in the Living Wage (Tinsmiths) Case of 1916, when a wage of \$5.40 per week was fixed for adult males.

Under the Industrial Code 1920 responsibility for declaring a living wage passed to the Board of Industry which had the power to differentiate between localities in its declarations. Prior to 1947 all such declarations applied to the State as a whole but in that year the Board decided on a 50c loading for the Whyalla and Iron Knob areas to compensate for the higher local cost of living. This loading is still in operation.

An amendment to the Industrial Code in 1949 provided for a quarterly adjustment of the living wage in accordance with variations in the basic wage for Adelaide.

Following the 1950 basic wage decision of the Commonwealth Court of Conciliation and Arbitration, the Industrial Code was amended to make permanent provision for the declaration of the living wage by proclamation.

Quarterly cost of living adjustments to the living wage ceased in 1953 following the decision of the Court of Conciliation and Arbitration to abandon such variations for their basic wage.

Although the Full Bench of the Industrial Commission has retained the power to amend the living wage, it has not done so since 1949, all subsequent variations having been made by proclamation following basic wage judgments until June 1967, when the Commonwealth Conciliation and Arbitration Commission introduced the total wage system and the State living wage was increased by \$1.00 for all adults. The State living wage was increased by a further \$1.35 for all adults on 28 October 1968 consequent upon the decision of the Commonwealth Conciliation and Arbitration Commission in the 1968 National Wage Case. Adjustments to the living wage since 1920 are illustrated in the graph on page 290.

Basic wage, living wage and minimum wage rates applicable since 1959 are recorded in the following table.

**Living Wage and Minimum Wage, South Australia**

Month First Operative	State Living Wage			Commonwealth Awards	
	State, except Whyalla and Iron Knob		Whyalla and Iron Knob	Basic Wage	Minimum Wage
	Males	Females	Males	Males (a)	Males
	\$	\$	\$	\$	\$
June 1959 .....	27.10	20.30	27.60	27.10	..
July 1961 .....	28.30	21.20	28.80	28.30	..
June 1964 .....	30.30	22.70	30.80	30.30	..
July 1966 .....	32.30	24.20	32.80	32.30	36.05
July 1967 .....	33.30	25.20	33.80	(b)	37.05
October 1968 .....	34.65	26.55	35.15	..	38.40

(a) Basic wage for females is 75 per cent of male rate.

(b) Basic wage eliminated from Commonwealth awards.

.. Not applicable.

A more detailed account of the history of the State Living Wage is included on pages 260-1 of *South Australian Year Book* 1968.

## Award Wages

The minimum weekly amounts provided in awards, determinations, and registered agreements under Commonwealth and State jurisdiction are known as award rates. The amounts shown in the following tables are a weighted average of minimum weekly wage rates payable to adult males and females in South Australia. Generally these are award rates; however, in a few cases where registered agreements are dominant in a particular industry, rates prescribed therein are used. The amounts shown should not be regarded as actual current averages, but rather as indexes expressed in money terms.

The minimum rates used are for representative occupations within each industry, the weights for each occupation and industry being based on sample surveys conducted in 1954, with allowance made where necessary for subsequent changes in the industrial structure. Because of coverage difficulties rural industries are excluded. The statistics are designed to show movements in minimum wages as distinct from salaries, with the result that those awards, etc. which relate solely or mainly to salary earners have been excluded.

The first table shows weighted average minimum weekly wage rates for adult males and adult females with separate details shown for male employees covered by awards etc. within Commonwealth and State jurisdictions. The index numbers refer to the total adult male and female wage rates. Classified as Commonwealth are awards of, or agreements registered with, the Commonwealth Conciliation and Arbitration Commission and determinations of the Commonwealth Public Service Arbitrator. Incorporated under the State heading are awards or determinations of, or agreements registered with, State industrial tribunals, together with any unregistered agreements used in the computations.

Minimum Weekly Wage Rates<sup>(a)</sup>: South Australia

31 December	Rates of Wage				Index Numbers (Base: Australia 1954 = 100)	
	Adult Males			Adult Females (All Awards)	Adult Males	Adult Females
	Common- wealth Awards, Etc.	State Awards, Etc.	All Awards			
	\$	\$	\$	\$		
1939.....	9.52	9.18	9.41	(b)	33.3	(b)
1945.....	11.76	11.25	11.60	(b)	41.1	(b)
1948.....	15.41	14.81	15.22	(b)	53.9	(b)
1951.....	23.72	23.35	23.60	17.02	83.6	85.5
1954.....	28.51	27.42	28.16	19.99	99.7	100.4
1957.....	30.92	30.22	30.69	21.95	108.7	110.3
1960.....	34.54	33.49	34.22	24.29	121.2	122.0
1963.....	36.81	35.48	36.40	25.52	128.9	128.2
1966.....	42.13	40.90	41.75	29.42	147.8	147.8
1967.....	44.15	42.95	43.78	31.30	155.0	157.2
1968.....	48.84	45.91	47.94	33.57	169.8	168.6

(a) Weighted average of minimum weekly rates payable for a full weeks work (excluding overtime) as prescribed in awards, determinations and agreements. Excludes rural industries.

(b) Comparable figures are not available.

In the next table weighted average minimum weekly wage rates for males and females are shown for individual industrial groups.

**Minimum Weekly Wage Rates<sup>(a)</sup>: Industrial Groups, South Australia**

*At 31 December*

Industrial Group	1964	1965	1966	1967	1968
	\$	\$	\$	\$	\$
<b>ADULT MALES</b>					
All industrial groups .....	38.69	39.48	41.75	43.78	47.94
Mining and quarrying .....	38.40	38.90	40.98	43.12	46.25
All manufacturing groups .....	38.61	39.18	41.26	43.12	47.84
Engineering, metal works, etc. ...	38.77	39.28	41.24	43.08	48.42
Textiles, clothing and footwear ..	36.93	37.53	39.58	41.28	44.17
Food, drink and tobacco .....	37.48	38.20	40.32	41.99	44.98
Sawmilling, furniture, etc. ....	38.08	38.74	40.81	42.70	47.75
Paper, printing, etc. ....	42.20	42.47	46.14	47.85	51.84
Other manufacturing .....	38.47	39.19	41.29	43.34	47.62
Building and construction .....	39.29	40.25	43.10	45.59	49.67
Railway services .....	37.60	38.51	40.70	42.49	45.26
Road and air transport .....	37.62	38.84	41.26	43.19	46.50
Shipping and stevedoring .....	38.81	39.65	41.88	43.85	47.36
Communication .....	44.10	47.09	49.30	52.77	58.50
Wholesale and retail trade .....	38.46	39.14	41.60	43.67	47.11
Public authority (n.e.i.) and community and business services ...	37.25	38.50	40.80	43.10	45.56
Amusement, hotels, personal services, etc. ....	36.58	37.10	39.26	40.81	43.24
<b>ADULT FEMALES</b>					
All industrial groups .....	27.29	27.75	29.42	31.30	33.57
All manufacturing groups .....	26.72	27.03	28.71	30.43	32.44
Engineering, metal works, etc. ...	26.59	26.82	28.53	30.22	32.52
Textiles, clothing and footwear ..	26.97	27.37	28.90	30.72	32.48
Food, drink and tobacco .....	26.51	26.77	28.62	30.17	31.98
Other manufacturing .....	26.79	27.43	29.18	31.04	33.00
Transport and communication ..	28.89	30.69	32.33	34.73	37.16
Wholesale and retail trade .....	28.02	28.39	30.09	32.22	34.99
Public authority (n.e.i.) and community and business services ...	27.95	28.54	30.18	32.24	33.59
Amusement, hotels, personal service, etc. ....	25.72	26.13	27.73	29.01	31.27

(a) For details of coverage see text above.

In May of 1963 and 1968 surveys were conducted to estimate the proportion of employees affected by awards, determinations, and registered agreements. The following table indicates the approximate proportions found to be affected under Commonwealth and State jurisdiction respectively. Also shown are the proportions of employees whose rates of pay and working conditions were not affected by awards, determinations or registered agreements including those working under unregistered agreements. Employees in rural industry and in private domestic service were excluded from the survey.

**Incidence of Awards, Determinations, and Registered Agreements  
South Australia, May 1963 and 1968**

Date	Employees			
	Represented in Estimates	Affected by Commonwealth Awards, Etc.	Affected by State Awards, Etc.	Not Affected by Awards, Etc.
	'000	%	%	%
		MALES		
May 1963 .....	194	55.7	29.0	15.3
May 1968 .....	218	58.0	28.6	13.4
		FEMALES		
May 1963 .....	64	23.7	62.3	14.0
May 1968 .....	78	27.9	60.9	11.3

**EARNINGS**

Figures given in this section relate to actual average weekly earnings (including award wages, salaries, overtime earnings, over-award and bonus payments and prepayments) of all wage earners and salaried employees, whether adult or junior, full-time, part-time, or casual. Payments to members of the defence forces are excluded.

Particulars of wages and salaries are not available for males and females separately and average earnings have therefore been calculated by dividing total civilian employment expressed in terms of 'male units'. Male units represent total male employment plus a proportion of female employment based on the approximate ratio of female to male earnings.

**Average Weekly Earnings per Employed Male Unit, South Australia<sup>(a)</sup>**

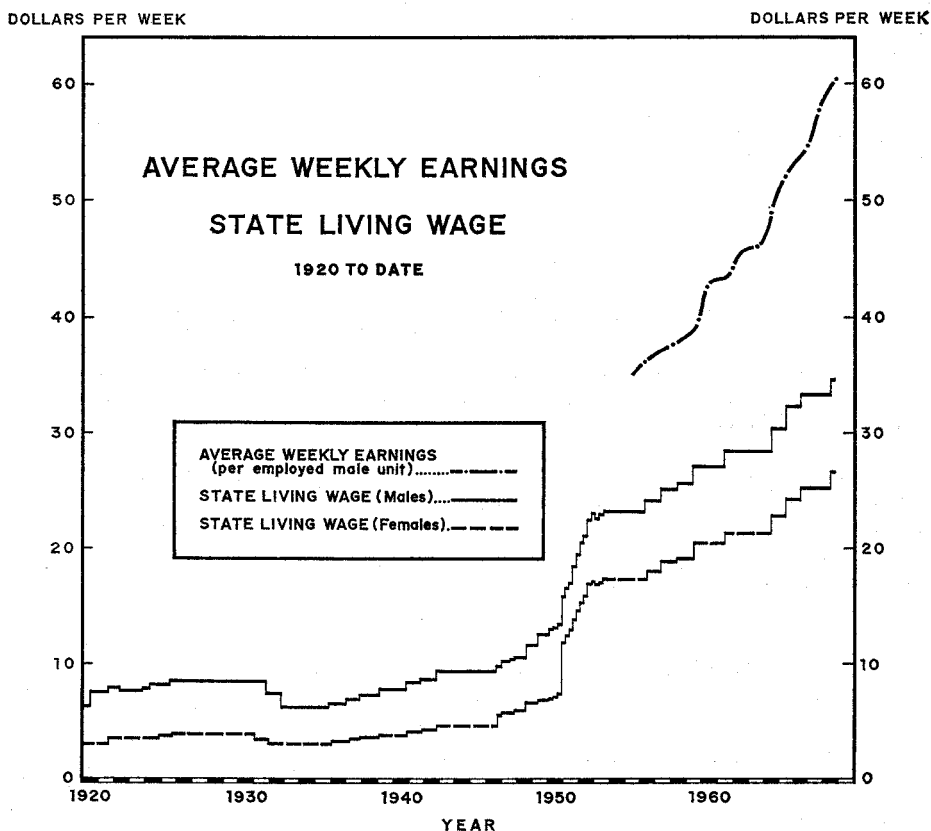
Year	September Quarter	December Quarter	March Quarter	June Quarter	Year
	\$	\$	\$	\$	\$
1959-60 ..	41.20	42.20	40.80	43.10	41.80
1960-61 ..	43.30	44.80	42.00	43.30	43.40
1961-62 ..	44.00	45.80	43.40	45.70	44.70
1962-63 ..	45.30	47.40	44.50	46.00	45.80
1963-64 ..	46.70	50.30	46.50	49.10	48.20
1964-65 ..	52.20	53.40	50.10	52.30	52.00
1965-66 ..	54.60	55.30	51.40	53.80	53.80
1966-67 ..	56.50	57.80	55.30	57.90	56.90
1967-68 ..	60.00	61.60	58.80	61.30	60.40
1968-69 ..	62.50	65.90	63.10		

(a) Includes Northern Territory.

As quarterly figures are affected by seasonal influences, comparisons for trends should be made by relating complete years or corresponding quarters. From December quarter 1963, comparisons with corresponding quarters of earlier

years are affected by additional prepayments arising from extensions of annual leave from two to three weeks. Due to variation in coverage, etc. these figures cannot be related to the minimum weekly wage rates shown in the preceding section.

Trends in average weekly earnings are expressed in the following graph, together with adjustments to the State living wage for males and females since 1920.



Separate estimates of the average weekly earnings of males and females, and of adults and juniors, have been obtained from sample surveys conducted in the last pay-periods of October 1962, 1963, 1964, 1966, 1967 and 1968.

These surveys were based on a sample selection of private employers subject to pay-roll tax. Consequently employees of government and semi-government authorities and of religious, benevolent and similar organisations exempt from pay-roll tax are excluded. Also specifically excluded are employees in rural industry and private domestic service, and casual waterside workers.

Summarised results of the last five surveys are given in the following table.



## Average Earnings, South Australia

October	Average Weekly Earnings				Average Hourly Earnings			
	Males		Females		Males		Females	
	Adult	Junior	Adult	Junior	Adult	Junior	Adult	Junior
	\$							
1963.....	49.30	22.50	28.50	18.20	1.15	0.55	0.71	0.46
1964.....	53.60	24.80	31.10	20.10	1.24	0.61	0.78	0.51
1966.....	58.00	27.70	33.70	22.30	1.35	0.68	0.85	0.57
1967.....	60.90	30.30	35.80	23.70	1.41	0.74	0.90	0.61
1968.....	64.60	31.70	37.20	23.90	1.51	0.77	0.93	0.61

Similar surveys were conducted in 1961 and 1965 to determine the distribution of employees at various levels of earnings. On both occasions the survey was restricted to adult male employees while part-time and casual employees were excluded. Government employees were included only in the 1965 survey.

## Adult Male Employees: Levels of Earnings, South Australia, October 1965

Earnings Per Week	Manufacturing			Non-Manufacturing			Total		
	Private	Govt	Total	Private	Govt	Total	Private	Govt	Total
	PERCENTAGE IN EACH GROUP								
Less than \$36 (a) .....	3.1	3.1	3.1	1.9	2.6	2.1	2.7	2.7	2.7
\$36 and less than \$40.....	6.4	6.6	6.5	9.1	9.4	9.2	7.4	8.7	7.7
\$40 and less than \$44.....	10.8	11.3	10.8	13.6	15.3	14.4	11.7	14.3	12.5
\$44 and less than \$48.....	13.6	15.2	13.8	12.3	15.0	13.6	13.2	15.0	13.7
\$48 and less than \$52.....	12.7	11.0	12.5	16.2	13.4	14.9	13.9	12.8	13.6
\$52 and less than \$56.....	13.0	13.2	13.0	10.5	11.8	11.1	12.1	12.2	12.1
\$56 and less than \$60.....	9.4	9.2	9.4	8.9	8.1	8.5	9.2	8.3	9.0
\$60 and less than \$70.....	16.6	12.7	16.1	14.0	12.7	13.4	15.7	12.7	14.8
\$70 and less than \$80.....	14.4	9.2	14.8	13.5	6.7	12.8	8.1	7.4	7.9
\$80 and over .....		8.5			5.0		6.0	5.9	6.0
Total .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Includes some who received less than the basic wage because they were on training rates, retainers only in survey work, elderly persons, etc.

In the private sector 34.6 per cent of all employees earned between \$36 and \$44 per week in 1961, whereas in 1965, 39.2 per cent earned between \$44 and \$56 per week. The 1965 results reveal that 35.0 per cent of employees in the private sector earned less than \$48 per week and 29.8 per cent earned \$60 or more. The corresponding details in the Government sector were 40.7 per cent and 26.0 per cent.

## HOURS OF WORK

In 1914 in South Australia the average working time per week excluding overtime was in excess of forty-eight hours for males and forty-nine hours for females. By 1921 the average working week was about forty-seven and forty-six hours respectively.

In 1927 the Commonwealth Court of Conciliation and Arbitration granted a standard working week of forty-four hours to the Amalgamated Engineering Union, and intimated that this reduction would be extended to other industries operating under similar conditions. In the same year the first 44-hour week under a State award was granted. The extension of the 44-hour week was delayed, however, by the onset of the depression, and the average working week (excluding overtime) for males was only slightly less than forty-seven hours at the end of 1931. Throughout the 1939-45 War the average working week was between forty-four and forty-five hours.

At the end of the war applications were made to the Commonwealth Court of Conciliation and Arbitration for a 40-hour week. Following an extensive hearing, the Court granted the reduction to forty hours in September 1947. In the following month the State Industrial Court, after hearing applications by unions, approved the incorporation of the 40-hour standard week into State awards. In general, the 40-hour week operated from the first pay-period in 1948.

In 1952 the employers approached the Commonwealth Court of Conciliation and Arbitration for an increase in the standard working week, but the application was rejected. A further application was made to the Commonwealth Conciliation and Arbitration Commission in 1961, this time seeking a temporary increase in the working week to forty-two hours with an accompanying increase in wages. This application was also rejected.

Today the 40-hour week is the standard working week for employees under Commonwealth and State awards; however, the number of hours constituting a full week's work varies between occupations. Certain Commonwealth awards covering rural industries prescribe hours in excess of forty, while other occupations by tradition work less than forty hours, although forty hours is generally retained in their awards.

The weighted average standard hours (excluding overtime) prescribed in awards, determinations, and agreements for a full working week for adult male employees in all industries in South Australia, except rural, shipping, and stevedoring, was 39.96 hours at 31 December 1967. This compared with 44.62 hours at 31 March 1939 and 43.83 hours at 30 September 1947 immediately prior to the introduction of the 40-hour week. The weighted average for female employees at 31 December 1967 was 39.77 hours. The weighted average figure for South Australian male employees has not changed significantly since 1953, nor for females since 1951.

The normal working day is of eight hours duration, and employees working beyond these hours are paid penalty rates. Award overtime rates are generally on the basis of time-and-a-half for the first four hours, with double-time thereafter. Double-time generally applies also to Saturday afternoon and Sunday work. Provisions usually restrict overtime so that the employee has a break of at least eight hours before resuming duty. Awards in certain industries provide for broken time and shift work. Employees on shift work normally rotate between shifts, receiving a loading for the working of afternoon and evening shifts.

The following table shows the relative distribution of employed civilian wage and salary earners in manufacturing industries for the six Australian State capital cities according to the number of hours worked in a specified week, as recorded

in the August Work Force Surveys for each of the years 1963 to 1967. The distribution is based on actual hours worked, including overtime, not hours paid for, and is therefore affected by public holidays, leave, absenteeism, temporary absence from work due to sickness, accident and industrial disputes, and work stoppages due to plant breakdowns and weather.

**Distribution of Hours Worked<sup>(a)</sup>, Six Australian State Capital Cities  
(Manufacturing Industries Only)**

August	Proportion who Worked the Following Hours in the Specified Week							Total
	0-14	15-24	25-34	35-40	41-44	45-48	Over 48	
	Per Cent							
1963.....	3.7	1.9	6.0	74.3	5.1	5.2	3.8	100.0
1964.....	4.0	2.2	4.4	71.2	5.7	6.6	5.9	100.0
1965.....	4.0	2.1	4.5	69.5	5.7	7.6	6.6	100.0
1966.....	3.9	2.6	4.5	68.4	5.6	7.5	7.5	100.0
1967.....	3.3	2.6	5.7	66.7	5.6	8.0	8.1	100.0

(a) Employed wage and salary earners, fourteen years of age and over until 1965. Subsequent figures relate to persons fifteen years of age and over.

## HOLIDAYS AND LEAVE

### Public Holidays

A number of days are observed each year throughout the State as public holidays and additional days may be proclaimed either on a State-wide basis or applicable to particular localities. Employees required to work on public holidays normally receive an extra day's pay and are paid at penalty rates.

The traditional public holidays are: New Years Day (first week-day in January); Australia Day (first Monday after 25 January); Good Friday, Easter Saturday, Easter Monday; Anzac Day (25 April or the following day if 25 a Sunday); Queens Birthday (Monday following the second Saturday in June); Labour Day (second Monday in October); Christmas Day (a holiday may be proclaimed for the following Monday if it falls on Sunday); and Proclamation Day (28 December or the following Monday if 28 falls on Saturday or Sunday).

### Annual Leave

Prior to 1936 the granting by Commonwealth tribunals of annual leave on full pay was restricted to exceptional cases. However, in that year the Commonwealth Court of Conciliation and Arbitration granted one weeks annual leave to employees in the printing industry. Thereafter annual leave was gradually introduced into other awards.

In 1945 the Court was approached for an extension of annual leave to two weeks. Although delineating the principles to be followed in considering applications for two weeks leave, the Court chose to leave the question of altering any particular awards to the discretion of the single Judges hearing the applications.

An approach for three weeks annual leave was made to the Commonwealth Conciliation and Arbitration Commission in 1960 by unions covered by the Metal Trades Award. In its judgment the Commission rejected the general

application of three weeks annual leave on economic grounds, but at the same time envisaged special cases where leave longer than two weeks would be justified. A further application for the general adoption of three weeks leave was made in 1962 but the Commission was still not satisfied with the ability of the economy to cope with such an increase. In April 1963 the Commission granted three weeks annual leave to employees under the Metal Trades Award who had completed twelve months continuous service. Provision was also made for holiday pay on a proportionate basis for employees who had completed one months service but whose employment was terminated before twelve months. Application of the new standard to other awards was left to individual Commissioners.

In May of the same year the State Industrial Court announced an increased standard of annual leave for employees under State awards, adopting for this purpose the Commonwealth standard. At present the majority of employees receive at least three weeks paid annual leave. In addition to recreation leave most Commonwealth and State awards provide a sick leave entitlement. Generally employees are entitled to at least one weeks sick leave on full pay during each year of service, with varying provisions for the accumulation of unused leave.

### **Long Service Leave**

Legislative provision for the granting of long service leave to employees was introduced in the Long Service Leave Act of 1957. This State legislation applied also to employees under Commonwealth awards, as the Commonwealth Conciliation and Arbitration Commission had refrained from determining disputes concerning long service leave. The Act provided for one week's leave in the eighth and each subsequent year of continuous service. Exempted from the State legislation were employers bound by an award or agreement to provide long service leave to employees covered by such an award or agreement, and employers providing long service leave, superannuation benefits or other similar benefits considered to be not less favourable than entitlement under the Act.

Later in 1957 employer organisations in a majority of industries signed agreements adopting a 'Federal Code of Long Service Leave' providing for thirteen weeks leave after twenty years service. The attraction of the Federal Code was that it recognised service dating back to 1937, whereas the Long Service Leave Act did not recognise service prior to 1950. The majority of South Australian employees are entitled to long service leave under the Federal Code.

Employees under a number of awards introduced since 1964 are entitled, at least in relation to future service, to thirteen weeks leave after fifteen years. In that year the Commonwealth Conciliation and Arbitration Commission provided for the first time for the inclusion of long service leave provisions in a Commonwealth award, granting employees in the graphic arts and metal trades industries leave on the basis of thirteen weeks for twenty years service in respect of employment prior to the decision, and thirteen weeks for fifteen years in respect of future service. These provisions have been extended to certain other Commonwealth awards. In a number of other cases, registered agreements provide for thirteen weeks leave after fifteen years service.

In 1966, the South Australian Industrial Commission varied a long service agreement, applicable to many employees, by prescribing long service leave on the basis of thirteen weeks for twenty years service for service prior to 1 January 1966 and thirteen weeks for fifteen years service for service after that date.

The Long Service Act, 1957 was repealed by the Long Service Leave Act, 1967 which came into operation on 16 November 1967. The new Act entitles employees in respect of continuous service after 1 January 1966 to thirteen weeks leave for fifteen years service and eight and two thirds weeks for each succeeding ten years service. In respect of service prior to 1 January 1966 the entitlement is calculated at the rate of thirteen weeks for twenty years service.

The obligation to grant leave is imposed on all employers in South Australia except in regard to employees entitled to long service leave pursuant to an award of the Commonwealth Conciliation and Arbitration Commission. The Industrial Commission has the power to exempt an employer from the provisions of the Act where the employees involved have access to benefits not less favourable than those prescribed by the Act. Other provisions of the Act relate to payment for leave, deferment of leave, claim for leave on termination of employment, and notice of granting of leave.

State and local government employees are in general entitled to thirteen weeks leave after ten years service, and Commonwealth Government employees to four and a half months after fifteen years service.

The various long service leave arrangements provide for additional *pro rata* periods of leave for service in excess of the minimum, and for *pro rata* payments for employees who have completed a specified term of service but who, through the termination of their services or through death, do not complete the full entitlement period.

#### APPRENTICESHIP

Legislation for apprenticeships in South Australia is contained in the Apprentices Act, 1950-1966. The provisions of the Apprentices Act, 1950 referred to the technical education which all apprentices must undertake for a specified period of their indenture and also provided a general coverage of the apprenticeship system. The amending Act, assented to in March 1966, provided for the replacement of the previous Apprentices Board by an Apprenticeship Commission consisting of a full-time chairman and five part-time members. The latter includes an equal number of representatives of employer organisations and trade unions and a representative of the Minister of Education.

Unlike the former Apprentices Board, which was an advisory body with strictly limited powers, the Apprenticeship Commission is empowered to take positive action with respect to apprenticeship matters. One of the more important new provisions is that an employer must receive the approval of the Commission before he can employ an apprentice, and additionally, the Commission has the power to cancel the approval of any employer to employ apprentices. Additional functions of the Commission include the promotion of the system of apprenticeship as a method of training for skilled occupations. Minors are encouraged to enter into indentures of apprenticeship and employers are encouraged to train apprentices and to equip themselves properly to train apprentices. The Commission was given the authority to determine the term of the indenture in any particular trade, subject to the provision that no term of indenture should exceed five years. In recent years, an increasing number of indentures have been for a four year term, particularly in the metal and electrical trades.

The amending Act also provided for the abolition of the existing trade-committees and for the appointment of advisory trade committees to cover each trade or group of trades. The original committees had been responsible for

reporting to the Apprentices Board on matters relating to the technical education of apprentices. In contrast, the function of each advisory trade committee is to advise the Commission on any matter relevant to apprentices in the particular trade for which it is responsible.

The technical education of apprentices remains the responsibility of the Minister of Education (see page 179), but the Commission has authority to make recommendations to the Minister on matters affecting their technical education. Other specific functions of the Commission are to promote the establishment of full-time trade-training centres by employers and to approve of group-apprenticeship schemes, the latter consisting of arrangements between groups of employers whereby the training of an apprentice who is indentured to one employer is undertaken by a group of employers.

The previous legislation required apprentices during the first three years of their apprenticeship to attend trade school for four hours a week in the employers' time and for two hours a week in the evening. This provision has been amended to provide for training at trade or technical schools for eight hours a week for the first two years of the apprenticeship and four hours a week in the third year, all of which training will be undertaken during working hours.

There is no general award rate of wages for apprentices as their wage rates are covered by the Award for the particular occupation or industry in which they are employed.

In the following table, the number of new apprenticeships commenced for the period 1963 to 1967 are given for the major industry groups.

**Number of New Apprenticeships Commenced: Trade Groups, South Australia**

Trade	1963	1964	1965	1966	1967
Metal .....	1,071	1,107	1,049	1,024	932
Electrical .....	365	357	395	360	315
Building .....	298	338	320	281	189
Furniture .....	115	119	94	106	88
Printing .....	74	87	84	109	64
Vehicle industry .....	83	111	128	74	87
Ship and boat-building .....	7	13	9	10	7
Bootmaking .....	30	28	24	17	13
Clothing .....	2	1	1	—	2
Coopering .....	2	—	1	3	1
Food .....	137	137	103	135	102
Hairdressing .....	268	275	261	253	279
Leather and canvas goods .....	2	3	3	6	2
Miscellaneous .....	5	11	9	6	12
<b>Total all trades ....</b>	<b>2,459</b>	<b>2,587</b>	<b>2,481</b>	<b>2,384</b>	<b>2,093</b>

The following table shows the number of new apprenticeships commenced, indentures completed, indentures cancelled, and apprentices employed at 31 December for the years 1963 to 1967.

**Apprenticeships: South Australia**

Particulars	1963	1964	1965	1966	1967
New apprenticeships commenced.	2,459	2,587	2,481	2,384	2,093
Number of indentures completed.	1,380	1,393	1,566	1,643	1,670
Number of indentures cancelled..	204	249	259	351	338
Number of apprentices employed	8,365	9,394	10,434	10,463	10,662

**7.4 INDUSTRIAL SAFETY****SAFETY REGULATIONS AND INSPECTION**

Most of the legislation directed at industrial safety is administered by the Department of Labour and Industry, although other authorities hold responsibilities in certain fields.

*Department of Labour and Industry*

The general working conditions in factories, shops, offices and warehouses are regulated by the Industrial Code, 1967-1969 which has repealed the Industrial Code, 1920-1966 and the Country Factories Act, 1945-1965. Inspections are made by departmental officers to ensure that the requirements of the Industrial Code with respect to safeguarding of machinery, safety of processes, cleanliness and general working conditions in factories are being observed.

The registration and inspection of steam boilers and other pressure vessels is provided for under the Boilers and Pressure Vessels Act, 1968. The Lifts Act, 1960, regulates the use of lifts, escalators, cranes and hoists, and requires the Department to approve new installations and to inspect regularly existing lift equipment. The Inflammable Liquids Act, 1961, and the Liquefied Petroleum Gas Act, 1960, regulate the storage and carriage of these products. The Construction Safety Act, 1967 widens the scope of safety supervision and provides that persons in charge of rigging work must be certificated by the Department and that at every building or construction site where more than twenty hands are employed a safety supervisor must be appointed. Provision of on-site amenities now comes within this Act rather than the Industrial Code.

*Department of Mines*

Regulations under the Mines and Works Inspection Act, 1920-1966, provide for the health and safety of persons engaged in mining or quarrying and for the protection of the general public. Mining sites must be maintained in safe conditions with specific attention given to ventilation, sanitation, and the use of explosives. Officers of the Department inspect mines and quarries, check old workings, and investigate mining accidents.

*Department of Public Health*

Health aspects of industrial safety are the responsibility of the Occupational Health Section of the Department of Public Health. The Department investigates health hazards resulting from the presence of toxic and noxious substances in industry, both on its own initiative and on reference from employers, unions, other authorities, and individuals. Investigations are carried out where radio-active and irradiating apparatus is in use for industrial, scientific, or medical purposes.

*Chemistry Department*

The Explosives Act, 1936-1968 regulates the importation, manufacture, carriage, storage, and sale of explosives. The Chemistry Department is responsible for the maintenance of government magazines and the licensing and inspection of private magazines. Vehicles used in the carriage of explosives are also licensed. Almost all commercial explosives, including fireworks, entering the State are inspected by the Department.

*Electricity Trust of South Australia*

Electrical installations are required to conform to the service rules of the Electricity Trust and the wiring rules of the Standards Association of Australia, and are subject to inspection by Electricity Trust officers. From 2 January 1968 persons engaged in the installation, maintenance or repair of electrical services and permanently connected equipment must be licensed to do this work in accordance with the provisions of the Electrical Workers and Contractors Licensing Act, 1965-1966.

**WORKMEN'S COMPENSATION****Legislation**

The first Workmen's Compensation Act, passed in 1900, covered factories and certain industries considered as offering hazards to employees, and set out a scale of compensation to be paid in the event of an accident without negligence by the employer having to be proved. Considerable amending legislation followed this early Act, and new Acts were passed in 1911 and 1932, gradually broadening the scope of the legislation as to persons covered, contingencies included, and the scale of benefits.

Current legislation, the Workmen's Compensation Act, 1932-1966, covers workmen whose average weekly earnings do not exceed \$110 against personal injury arising out of or in the course of their employment. The coverage extends to recess periods, travelling to or from work, travelling to or from or while in attendance at a place of pick up, travelling to or from or attending a trade or technical school, and travelling for medical treatment while on compensation. Diseases due to the nature of the employment are treated as injury, and special provision is made for silicosis and for certain industrial diseases contracted at Port Pirie.

Excluded from the scope of the Act are casual workers, outworkers, members of the crews of fishing vessels remunerated by a share in the profits or the gross earnings of the working of such vessels, service personnel and Commonwealth employees; the last-named being covered by the *Commonwealth Employees' Compensation Act* 1930-1967.

Where death results from the injury the Act provides for the payment of a lump sum based on four years earnings plus \$220 for each dependent child under sixteen years, with a minimum payment of \$2,200 and a maximum of \$12,000 plus the dependent child allowance. Proportionate payments are made to partial dependants, and where there are no dependants medical and funeral expenses are met.

Where the accident results in total incapacity, the worker receives a weekly payment of between \$12 and \$22 plus allowances for wife and dependent children, with a maximum payment of \$32.50 or average weekly earnings, whichever is the less. Payment in relation to loss of earning capacity is made in the case of partial incapacity.



Provision is made for lump sum payments in lieu of weekly payments. Such payments are arranged by agreement; or after six months, by arbitration on application of either employer or employee. The total liability of the employer is limited to \$12,000 in the case of total incapacity and \$9,000 for partial incapacity, in addition to weekly payments already made. Lump sum compensation is also provided for certain specified injuries, *e.g.* loss of limbs.

In addition to other compensation reasonable medical, hospital, nursing, and ambulance expenses are paid and compensation to \$60 is provided for damaged clothing.

The Minister responsible for administering workmen's compensation is the Treasurer, with the Treasury responsible for surveillance of the Workmen's Compensation Act and Regulations.

### **Workmen's Compensation Insurance**

The Workmen's Compensation Act requires every employer, unless specifically exempted, to obtain from a licensed insurance company a policy which fully covers his liability under the Act. The exemptions are the State Government which provides its own cover through the Government Accident Insurance Office, the South Australian Railways Commissioner, and any employer who can satisfy the Minister of his ability to meet all probable claims and who is accordingly issued with a certificate of exemption.

The following table shows the number of effective claims lodged with, and total compensation payments made by, insurance companies and self insurers during each of the last five years. Payments shown against any year will include some payments arising from claims lodged in earlier years.

**Workmen's Compensation Claims  
South Australia**

Year	Claims Lodged	Payments Made
	No.	\$'000
1963-64 .....	51,350	3,866
1964-65 .....	55,600	4,306
1965-66 .....	58,350	4,725
1966-67 .....	56,500	5,395
1967-68 .....	54,200	5,774

### **INDUSTRIAL ACCIDENTS**

Detailed information on industrial accidents in South Australia was first collected in 1961. Statistics are compiled from reports of workmen's compensation claims submitted by insurance companies, self-insurers, and State Government departments through the South Australian Department of Labour and Industry.

The collection is restricted to fatal accidents and to accidents causing an absence from work of one week or more. Cases involving travelling to or from place of employment, occurring during a recess period, or involving diseases are excluded.

Particulars of the number of industrial accidents, of time lost, and compensation paid are given below for the years 1963-64 to 1967-68. The figures for any one year relate to claims closed during the year and to unclosed claims at the end of the year which have been outstanding for three years. Fluctuations in the flow of processing and reporting of claims can significantly affect the figures for any given year.

Of the 9,562 non-fatal accidents in 1967-68, 911 involved females. No accident resulting in the death of a female has been reported since statistics have been compiled.

### Industrial Accidents, South Australia

Particulars	Unit	1963-64	1964-65	1965-66	1966-67	1967-68
Accidents :						
Fatal .....	No.	20	17	23	14	12
Non-fatal .....	No.	11,098	11,809	10,522	10,453	9,562
Time lost :						
Total .....	week	43,867	43,376	37,659	40,306	38,942
Average per accident	week	4.0	3.7	3.6	3.9	4.1
Amount Paid (a) :						
Fatal accidents ....	\$'000	129.6	103.3	166.3	131.7	117.8
Non-fatal accidents.	\$'000	2,348.3	2,504.5	2,212.0	2,784.5	3,041.0
Total .....	\$'000	2,477.9	2,607.8	2,378.3	2,916.2	3,158.8
Average per non-fatal accident .....	\$	212	212	210	266	318

(a) Compensation for wages lost, hospital and medical expenses, and lump sum settlements.

Industrial accidents for 1967-68 are classified below by industry group. As the statistics are based on workmen's compensation claims, persons outside the scope of the South Australian Workmen's Compensation Act are excluded. Notable exclusions are self-employed persons and all Commonwealth Government employees. Thus persons employed within some industry groups, e.g. defence services and communication, are not covered at all while coverage is reduced in other groups, particularly in commerce and primary production.

### Industrial Accidents: Industry Groups, South Australia, 1967-68

Industry Group	Fatal Accidents		Non-fatal Accidents			
	Number	Amount Paid (a)	Number	Proportion of Total	Time Lost	Amount Paid (a)
		\$'000		%	Weeks	\$'000
Primary production .....	3	20.4	869	9.1	4,068	270.9
Mining and quarrying .....	—	—	122	1.3	458	23.9
Manufacturing .....	2	13.6	4,105	42.9	15,445	1,284.0
Electricity, gas, water, and sanitary services .....	1	19.4	488	5.1	2,298	139.2
Building and construction ..	2	33.0	1,441	15.1	6,646	683.7
Transport and storage .....	2	18.0	623	6.5	2,388	167.8
Finance and property .....	—	—	26	0.3	109	4.9
Commerce .....	1	3.2	1,198	12.5	4,503	282.3
Public authority (n.e.i.) and community and business services .....	—	—	345	3.6	1,609	113.6
Amusement, hotels, accommodation, cafes, etc. ....	1	10.2	345	3.6	1,419	70.8
Total .....	12	117.8	9,562	100.0	38,942	3,041.0

(a) Compensation for wages lost, hospital and medical expenses, and lump sum settlements.

Most of the non-fatal accidents in 1967-68 involved injuries to the arm or hand (3,462), the leg or foot (2,626) or the trunk (2,506). Other accidents resulted in 253 eye injuries, 346 head injuries and 322 injuries to the neck or spine.

In the following table industrial accidents are allocated to an accident factor, this being the underlying agency, other than human failing, which appeared to contribute most materially to the accident.

#### Industrial Accidents: Accident Factor, South Australia

Accident Factor	1965-66		1966-67		1967-68	
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal
Machinery .....	3	1,162	1	1,232	—	941
Vehicles .....	8	447	3	456	6	373
Electricity, explosions, flames, hot substances .....	2	274	—	258	—	335
Falling, slipping, stumbling, etc. ...	4	2,208	4	2,218	1	2,072
Striking against, stepping on, etc. ...	—	593	3	564	—	440
Struck by moving or falling objects.	3	2,054	3	1,719	4	1,715
Strain in handling .....	1	2,067	—	2,096	—	1,938
Sharp objects .....	—	402	—	465	—	487
Hand tools .....	—	859	—	875	—	734
Miscellaneous .....	2	456	—	570	1	527
Total .....	23	10,522	14	10,453	12	9,562

The following table indicates the distribution of industrial accidents for 1967-68 by occupational groups which are derived from the Australian Classification of Occupations. Details for 1966-67 are obtainable on request.

#### Industrial Accidents: Occupational Groups, South Australia, 1967-68

Occupational Group	Males			Females	Total Accidents
	Fatal	Non-fatal	Total	Non-fatal	
Professional, administrative, managerial, clerical workers .....	1	164	165	91	256
Sales workers .....	—	110	110	123	233
Farmers, fishermen, etc. ....	3	876	879	44	923
Quarrymen .....	1	98	99	—	99
Transport workers .....	2	660	662	13	675
Craftsmen, process workers:					
Textile and Clothing Trades ..	—	89	89	61	150
Metal tradesmen .....	—	2,314	2,314	102	2,416
Building tradesmen .....	2	975	977	8	985
Food processors .....	—	507	507	62	569
Plant operators .....	—	343	343	—	343
Freight handlers .....	—	590	590	3	593
Labourers .....	2	1,345	1,347	12	1,359
Other .....	—	336	336	99	435
Service and recreation workers ..	1	244	245	293	538
Total .....	12	8,651	8,663	911	9,574

NOTE: No accident resulting in the death of a female was reported for 1967-68.

## **PART 8**

# **PHYSICAL DEVELOPMENT**

## **8.1 WATER SUPPLY AND SEWERAGE**

### **WATER SUPPLY**

With 96 per cent of the State receiving less than 20 inches of rain per annum, and high evaporation increasing the demand for water and causing heavy losses from reservoirs, water conservation is of vital importance to South Australia. Water supplies, other than in irrigation areas, are under the control of the Engineering and Water Supply Department through the Waterworks Act, 1932-1966, and the Water Conservation Act, 1936.

### **METROPOLITAN WATER SUPPLY**

From 1836 to 1860 the inhabitants of Adelaide and the surrounding plains obtained their water from the River Torrens and other streams, from springs and shallow wells, or by collecting the water shed from roofs.

Growth of population caused the primitive methods of supply and distribution to become inadequate and in December 1860 Adelaide received its first supply under pressure from Thorndon Park Reservoir. This early reservoir situated seven miles north-east of Adelaide is filled from a diversion weir on the Torrens Gorge. A second reservoir—Hope Valley—completed in 1872, is also filled from the River Torrens. These reservoirs are of a low altitude and residents of the eastern foothills still had to rely on local creeks, or on water pumped into storage tanks, for their supply.

In 1888 a royal commission recommended the construction of a reservoir to be fed from the River Onkaparinga—Happy Valley Reservoir being completed in 1896. The next major development was the completion of the Millbrook Reservoir in 1918 on the Chain of Ponds Creek, its intake coming from the River Torrens through a mile long tunnel. Mount Bold, completed in 1938, differs from the earlier reservoirs in that it does not lead directly into a reticulation system. Built on the Onkaparinga it functions as a storage for the Happy Valley

Reservoir. With the construction of Mount Bold Reservoir the only catchment areas in immediate proximity to Adelaide, namely the Torrens and Onkaparinga areas, had been harnessed.

However, with the growth of population an increased supply was needed and in 1945 over fifty boreholes were drilled in the Adelaide Artesian Basin, a basin of approximately thirty square miles to the north and west of the city. These bores can be brought into operation at short notice and yields vary from 500 to 25,000 gallons per hour.

The feasibility of Adelaide augmenting its water supply by means of a pipeline from the River Murray had been considered on a number of occasions, and in 1949 the project was commenced. The first Murray water reached the metropolitan system in 1954. The water is drawn from the river at Mannum, nearly forty-two miles in a direct line from Adelaide, and is raised by three pumping stations a total of 1,490 feet to a 30 million gallon summit storage near Tungkillo. At first the water flowed into the Torrens and Onkaparinga Rivers and hence into the metropolitan system; later the pipeline was extended to a terminal storage near Modbury. The Mannum-Adelaide pipeline is also connected to the Warren Reservoir on the South Para River and branches serve many country areas *en route*.

With the growing demand for water in Adelaide and areas immediately to the north, investigations were focused on a site on the South Para River, the potentiality of this site having been recognised as far back as 1878. The South Para Reservoir was completed in 1958 and supplies water, *via* the Barossa Reservoir, to the metropolitan area and the Lower North. In 1960 the capacity of the South Para Reservoir was increased.

There was also considerable development taking place in areas to the south of the metropolitan area, and in 1958 a dam was commenced on the Myponga River thirty-four miles south of Adelaide. The Myponga Reservoir, completed in 1962, supplies surrounding districts and areas to the south of Adelaide, surplus water being fed into the Happy Valley Reservoir. The Mount Bold dam was raised in 1962, increasing the capacity of the reservoir by over 50 per cent.

The following table shows particulars of the Adelaide Metropolitan Waterworks system for the past five years.

**Adelaide Metropolitan Waterworks, South Australia**

Particulars (a)	1963-64	1964-65	1965-66	1966-67	1967-68
Length of Mains (miles) .....	3,147	3,333	3,456	3,650	3,735
Number of Services .....	211,163	220,128	228,342	238,121	242,193
Revenue:	\$'000				
Rates and Excess Water ....	7,742	8,359	9,441	11,003	10,187
Other .....	130	58	80	80	80
Total .....	7,872	8,417	9,521	11,083	10,267
Expenditure:					
Working Expenses .....	3,936	4,222	5,292	5,142	6,746
Interest .....	3,610	3,907	4,248	4,500	4,730
Total .....	7,546	8,129	9,540	9,642	11,476
Surplus .....	326	288	—19	1,441	—1,209

(a) Includes particulars relating to near country areas supplied by extensions of Metropolitan distribution systems.

A new reservoir to be known as the Kangaroo Creek Reservoir is currently under construction in the Torrens Gorge downstream from the Millbrook diversion, and is expected to be completed late in 1969. Construction of a second River Murray pipeline to Adelaide commenced in 1968. This extends for thirty miles from Murray Bridge to the River Onkaparinga to augment reservoirs on that stream. The pipeline will employ three pumping stations and have an ultimate capacity of 30,000 million gallons per year. A hydro-electric generating plant of 5 megawatt capacity will be incorporated at the point of discharge.

### COUNTRY WATER SUPPLY

Early settlement was confined mainly to localities in which water supplies, considered to be permanent, were available in the form of springs, soaks or running streams. Settlement gradually extended further from the sources of supply, and many sources previously considered permanent failed under prolonged periods of drought.

Water required for domestic use and for stock was obtained from tanks excavated on the properties, wells (in areas with sub-surface water), streams and water conservation works provided by the State. The Water Conservation Act of 1886 was passed to enable the State to provide and control necessary water supplies. Works constructed or acquired under this Act comprised approximately 340 bores, 460 wells and 550 dams, tanks or rain-sheds, costing nearly \$3,000,000. These small water conservation schemes, while of immense value eventually proved to be inadequate.

#### **Reticulated Supplies**

The first large country water conservation and distribution scheme, the Beetaloo system, was completed in 1890. The Beetaloo Reservoir, ten miles east of Port Pirie, was the first of three major reservoirs in the Flinders Ranges, each interconnected and serving the farming areas of the Mid-North. The subsequent reservoirs were the Bundaleer between Gulnare and Spalding completed in 1902, and the Baroota nineteen miles north of Port Pirie completed in 1922. Nectar Brook Reservoir, serving the Port Augusta district, was completed in 1899.

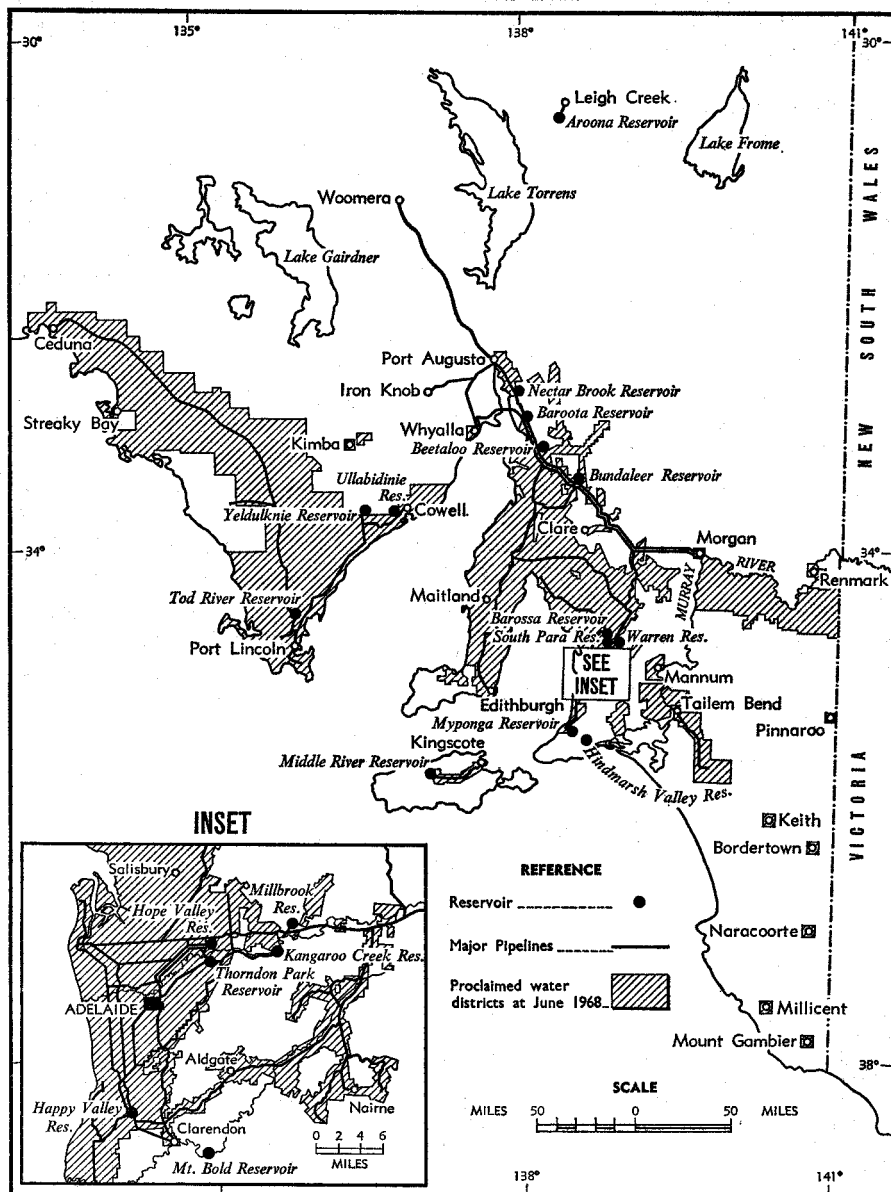
Reticulation in the Lower North began with the construction of the Barossa Reservoir on the South Para River in 1902. The Warren Reservoir, the most elevated in the State, followed in 1916, and South Para Reservoir, completed in 1958 caters for an area extending as far north as Port Wakefield. Northern development of Adelaide during recent years has spread into the country areas served by Barossa and South Para Reservoirs and both are now officially listed as metropolitan rather than country reservoirs.

A thirty-three mile pipeline is currently being constructed between Swan Reach and Stockwell to provide a source of River Murray water for Lower Northern areas.

Water reticulation schemes on Eyre Peninsula date from 1912 when, under the Yeldulknie Scheme, three reservoirs were constructed across intermittently flowing creeks in the hilly country west of Franklin Harbor. In 1922 a reservoir was constructed on the Tod River. Port Lincoln, approximately seventeen miles away, was connected to the reservoir in 1927 and a 240 mile pipeline to Thevenard was completed in 1928. The Tod River Reservoir was later connected to the Yeldulknie system and since 1947 the Uley-Wanilla, Lincoln and Poldia underground basins have been developed successively to provide additional sources of supply for the major distribution system on Eyre Peninsula. Construction of a sixty-eight mile pipeline to connect the system to Kimba commenced in 1969.

With the growth of Whyalla, local supply became inadequate, and in 1940 work commenced on a pipeline from the River Murray. The Morgan-Whyalla Pipeline, completed in 1944, includes four pumping stations which lift the water 1,558 feet over a distance of fifty-seven miles from Morgan to a summit storage at Hanson. From here the water gravitates 166 miles *via* Port Augusta to Whyalla.

### PORTION OF SOUTH AUSTRALIA WATER SUPPLIES



Branch lines have been laid to Woomera (110 miles) and other country centres. The Morgan-Whyalla Pipeline, being an additional source of supply for the Bundaleer system, has permitted reticulation over most of Yorke Peninsula. A second main was completed in 1966 and work is proceeding on pumping stations and storages which, when completed, will more than double the capacity. This main parallels the original one to Baroota Reservoir and then turns westerly to make a seven and a half mile undersea crossing of Spencer Gulf between Mambray Creek and Point Lowly.

The Encounter Bay area has been supplied from a reservoir in the Hindmarsh Valley since 1917, this supply being augmented more recently by water pumped from the River Murray at Goolwa.

### Local Water Schemes

In addition to the extensive reticulated schemes there are many local water supply schemes. Mount Gambier has drawn water from the Blue Lake since 1883 and many towns have small reservoirs serving their needs. Towns along the River Murray are supplied from the river and river water is reticulated to adjacent farm lands. An eighty-nine mile pipeline now nearing completion between Tailm Bend and Keith will provide the means of reticulating towns and farm lands in the Upper South East.

### Underground Water

Underground water-bearing areas occur in many parts of the State, and without these resources the development of extensive areas remote from surface waters would have been impracticable.

The Great Artesian Basin extends over the far northern and north-eastern portion of the State. Many bores have been sunk in this basin including several along the stock route from Birdsville in Queensland to Marree. The daily flow from approximately 160 Government bores is 13 million gallons.

In addition to the Adelaide Basin and the Uley-Wanilla, Lincoln and Poldas Basins on Eyre Peninsula other underground sources yielding considerable supplies are the Robinson Basin supplying Streaky Bay and the Murray Basin which is essential to development of the Murray Mallee country and the south-east of the State.

A more detailed discussion on underground water appears on pages 18-20.

### Major Reservoirs<sup>(a)</sup>, South Australia

*At 31 December 1968*

Reservoir	Capacity	Area at Full Supply Level	Catchment Area
	Acre ft	Acres	Sq Miles
South Para .....	41,647	1,096	88
Mount Bold .....	38,477	762	150
Myponga .....	21,763	693	48
Millbrook .....	13,441	440	90
Happy Valley .....	10,334	465	174
Tod River .....	9,196	330	76
Bundaleer .....	5,163	210	605
Warren .....	5,163	338	46

(a) All reservoirs with a capacity in excess of 5,000 acre-feet.



Water Supplies<sup>(a)</sup>, South Australia

At 30 June	Area of Works	Storage Capacity (b)	Length of Mains	Capital Cost to Date (c)
	Sq Miles	Acre ft	Miles	\$'000
1881.....	<i>n.a.</i>	3,986	408	1,988
1891.....	(d)2,167	6,825	976	3,570
1901.....	2,279	18,554	1,577	5,964
1911.....	4,383	28,079	2,793	9,096
1921.....	7,740	46,924	4,126	13,876
1931.....	18,677	62,229	6,030	26,136
1941.....	18,544	87,774	6,450	31,218
1951.....	18,701	88,244	7,203	50,380
1961.....	20,498	130,488	9,292	142,104
1964.....	20,895	166,490	10,469	187,908
1965.....	21,132	166,512	10,774	207,612
1966.....	21,640	166,549	11,091	221,919
1967.....	21,700	166,564	11,287	235,621
1968.....	21,760	167,063	11,447	250,288

(a) Controlled by Engineering and Water Supply Department and preceding State authorities.

(b) Includes Morgan-Whyalla pipeline storage tanks.

(c) Total original cost of assets.

(d) 1892.

*n.a.*—Not available.

## Water Storage and Consumption, South Australia

Particulars	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
	Acre feet					
Water storage: (capacity at end of year)						
Adelaide Metropolitan Water Supply (a).....	89,231	89,254	89,268	89,303	134,619	134,649
Country Water Supply (b)....	76,880	77,235	77,244	77,246	31,945	32,424
Water Consumption:						
Adelaide Metropolitan Water Supply (c).....	88,785	99,216	95,051	102,238	102,901	94,719
Country Water Supply (d)....	39,472	40,836	43,527	47,028	45,960	46,438
Pumped from River Murray:						
Mannum-Adelaide pipeline ..	32,897	18,667	18,299	56,703	38,050	78,488
Morgan-Whyalla pipeline ....	11,764	10,309	15,180	15,450	18,343	20,296
Other Supply Systems .....	2,035	3,826	3,965	5,070	5,270	5,617

(a) Includes Myponga reservoir and from 1966-67 South Para and Barossa reservoirs.

(b) Includes South Para and Barossa reservoirs up to 1965-66.

(c) Consumption within the Adelaide Statistical Division.

(d) Includes consumption in various areas outside of the Adelaide Statistical Division supplied from the Metropolitan distribution system.

## WATER RATES AND CHARGES

Water rates are levied on all properties served from or abutting a water main except in a few isolated cases where supply by measure is given to properties outside of proclaimed Water Districts. Payment of rates permits the use of a quantity of water without further charge. This quantity, termed the rebate allowance, is determined by dividing the rate by the current price of rebate water. Water used in excess of the allowance in any year is charged for by measure at the current price of excess water.

Two systems of rating are employed. In both cases scales of rates and prices of rebate and excess water vary in different districts, according to costs of construction and operation, and are subject to review from year to year.

In city and township water districts, rates are calculated on assessed annual property values which may be three-fourths of the gross annual rental value or 5 per cent of the capital value of the fee simple. The present scale of rates at Adelaide and the majority of country towns is 7½ per cent per annum up to the assessed annual value of \$2,000 and 5 per cent on the assessed annual value above \$2,000, with a minimum annual charge of \$12. The current price of both rebate water and excess water at Adelaide is 35 cents per thousand gallons.

Farmlands within certain proclaimed Country Lands Water Districts are rated on the area of land which is within one mile of a water main at a rate per acre based on unimproved land values. Current Country Lands rates vary from \$4.80 per hundred acres on land valued at \$2.00 per acre in the lowest rated district up to \$57.00 per hundred acres on land valued at \$24.00 or more per acre in the highest rated district. A minimum rate of \$12.00 is levied in most districts.

Services from mains to property boundaries are installed and maintained by the Engineering and Water Supply Department. Connection fees are uniform throughout the State and are currently \$38.00 for a half inch service and \$42.00 for a three-quarter inch service, with commensurately higher fees for larger services.

## SEWERAGE

### ADMINISTRATION

Sewerage of cities and towns in South Australia is undertaken by the State Government under the authority of the Sewerage Act, 1929-1967. The Act is administered by the Engineering and Water Supply Department for the Minister of Works and provides for waterborne sanitary sewerage schemes within proclaimed drainage areas. As a general rule the Government sewerage schemes are provided only in densely populated cities and towns where they are essential for public health reasons or in areas where it is necessary to protect surface or underground water resources from pollution by domestic or industrial wastes.

Local Government authorities are empowered under the Local Government Act, 1934-1969 to provide sanitary drainage schemes and in recent years a number of these authorities have installed common septic tank effluent drainage schemes discharging to filters or oxidation ponds. A Drainage Co-ordinating Committee comprising an independent chairman and representatives of the Engineering and Water Supply and Public Health Departments has been established by the Government to provide guidance to local authorities and co-ordinate their planning with the State authority.

### METROPOLITAN SEWERAGE

Sewerage for Adelaide was first authorised by an Act of Parliament in 1878. Construction began in 1879 and by 1881 sewage from the city and inner suburbs was admitted to a sewage farm at Islington. Since then continual expansion of sewerage systems has kept pace with development of the metropolitan area as far as physical and financial factors permit and Adelaide is now the most completely sewered of the capital cities.

The proclaimed Adelaide Drainage Area at present serves an estimated population of 762,000 persons and covers 191 square miles of the Adelaide Plains between Darlington and Elizabeth and a segment of southern development around Christies Beach. Trunk extensions to serve the Gawler area and

additional southern areas are planned for the near future. Subdivision developers are required to make capital contributions towards the cost of sewer and water extensions for all new allotments in areas capable of being served within the Drainage Area.

Four major sewerage systems are employed, each draining to separate sewage treatment works at Bolivar, Glenelg, Port Adelaide and Christies Beach. Islington Sewage Farm was abandoned in 1966 when the Bolivar Treatment Works was put into service. The Christies Beach works are temporary and will be replaced by permanent works to serve a larger area of the south coast in the near future. Some additional small temporary treatment works have been installed in the Reynella-Morphett Vale area pending completion of the main Christies Beach Treatment Works and extension of trunk sewers.

A few common effluent drainage systems have been installed in fringe areas by local government authorities and some of these have been, or are planned to be, connected to the sewerage systems. A *per capita* charge is levied against local government authorities whose common effluent drainage systems discharge to sewer mains.

The next table shows details of metropolitan sewers for the last five years.

Metropolitan Sewers, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Adelaide Drainage Area (square miles) .....	159	161	179	184	191
Length of sewers (miles) .....	1,774	1,854	1,952	2,039	2,125
Number of connections .....	194,889	204,128	213,375	220,799	227,479
\$'000					
Revenue:					
Rates .....	5,121	5,418	6,258	6,723	7,072
Other .....	118	94	127	81	84
Total .....	5,239	5,513	6,386	6,804	7,156
Expenditure:					
Working Expenses .....	2,201	2,363	2,614	2,880	3,375
Interest .....	1,265	1,380	1,561	2,195	2,822
Total .....	3,466	3,743	4,175	5,075	6,197
Surplus .....	1,774	1,769	2,211	1,729	959
Capital Cost to Date (a) .....	41,707	50,209	59,729	69,836	79,367

(a) Total capital funds provided from State revenue and loan funds, Commonwealth Government Grants and other sources.

### COUNTRY SEWERAGE

At 30 June 1968 the drainage areas of country sewerage schemes constructed and operated by the Engineering and Water Supply Department totalled 26.7 square miles; the length of sewers laid was 215 miles and the number of connections totalled 10,715. Capital cost to this date amounted to \$11,848,000.

Sewerage schemes are located at Angaston, Gumeracha, Lobethal, Mannum, Millicent, Mount Gambier, Myponga, Naracoorte, Port Lincoln and Whyalla.

Construction of the Whyalla and Millicent Sewerage Systems are still in progress. In 1967-68, thirty-four miles of sewers and 2,901 new connections were laid in country drainage areas. In addition, the Engineering and Water Supply Department has constructed schemes at Mount Burr and Nangwarry

townships for the Woods and Forests Department and numerous schemes to serve country hospitals, institutions, etc. operated by other authorities.

Common effluent drainage schemes have been installed by local government authorities at Berri, Bordertown, Cleve, Eudunda, Kapunda, Maitland, Nuriootpa, Pinnaroo, Port Elliot, Renmark and Waikerie and the construction or design of schemes for a number of other towns is in progress.

### SEWER RATES AND CHARGES

The Engineering and Water Supply Department provides sewer connections to property boundaries but internal drainage systems which are the responsibility of landholders must conform to regulations under the Sewerage Act and must be installed by authorised plumbers. Standard fees for sewer connections are \$75 and \$100 for 4-inch and 6-inch sizes respectively.

Sewer rates are levied on properties connected to or abutting a sewer, with a minimum annual charge of \$12. Current scales of rates in the Adelaide Drainage Area vary from  $6\frac{1}{2}$  per cent to 10 per cent of assessed annual property values; the higher rates being charged in Sub Areas where costs of construction or operation are abnormal.

Country charges for sewer connections are the same as for the metropolitan area. Current sewer rates in all country towns are 10 per cent of assessed annual property values, with a minimum annual charge of \$12.

Rates levied by local government authorities on properties connected to common effluent schemes are usually proportionate to the costs and interest charges involved in the schemes.

## 8.2 IRRIGATION AND DRAINAGE

### IRRIGATION

The development of irrigation areas in South Australia has been carried out by both Government authorities and private interests. Since 1930 the controlling authority for Government irrigation areas has been the Department of Lands with the Engineering and Water Supply Department the constructing authority for the Minister of Irrigation.

Irrigation areas are confined almost exclusively to the Murray Valley and can be classified into two groups; highland areas requiring the pumping of water, and reclaimed lands watered by gravitation. During 1967-68, 371,048 acre-feet (approximately 100,000 million gallons) of water were diverted from the River Murray in South Australia for irrigation purposes. Details of the production of these areas are given in Part 9, pages 372-3.

#### Highland Areas

With the major exception of the Mypolonga Irrigation Area, highland irrigation is located in the hot and dry zone along the River Murray between Morgan and the Victorian border.

Large scale irrigation dates from the Chaffey Bros Irrigation Works Act of 1887. The two Chaffey brothers had come from America to assist in irrigation development and undertook to establish irrigation works at Renmark in return for certain land concessions. With the departure of the Chaffeys in 1893 the

Renmark Irrigation Trust was formed. This trust administered the Renmark Irrigation Area as a local governing body until 1960, when it became responsible solely for irrigation matters.

Attempts by the Government to alleviate unemployment during 1894 by the formation along the River Murray of villages run on community lines was unsuccessful and in 1899 a system of independent holdings with a co-operative water supply was substituted. Only the Lyrup Village Association remains today.

The preparation of irrigated land for fruitgrowing was first undertaken by the Government in 1909. Steady progress with development and settlement continued until 1918 when the Government adopted a policy that all future allotments were to be reserved for returned soldiers, which accelerated development. However, following a heavy decline in prices, development ceased in 1923 and it was not until the end of the 1939-45 War that the area under irrigation showed any marked increase. Here again development was stimulated by the need to rehabilitate ex-service personnel, and between 1946 and 1954, approximately 8,000 acres of irrigable land were developed under the War Service Land Settlement Scheme, the largest settlement being at Loxton (approximately 6,500 acres). Since 1954 there has been no further large-scale development by the Government, and the authorities have been devoting their attention to the maintenance and improvement of existing schemes and in particular to the complete electrification of pumping plants.

A number of private schemes have also been developed in the post-war period.

Highland areas are largely devoted to vineyards and citrus and stone fruit orchards which are irrigated by water pumped from the river in open concrete-lined channels or pipes. Many of the recently developed areas use a system of overhead or under-tree sprays for watering the blocks in preference to the traditional surface reticulation. Sprays are also being used to increase the acreage in a number of the older areas by bringing in land too high for reticulated watering. Landholders pay an annual rate for routine irrigation and a charge is made for additional water, except at Loxton and Cooltong where water is supplied on a measurement basis.

Irrigation systems must also provide for the removal of surplus water which accumulates beneath the surface of the land. Blocks have internal drainage systems leading initially to shafts and bores, and later, when these become inoperative, to comprehensive drainage systems which convey the water to evaporation basins.

### **Reclaimed Areas**

On the lower Murray between Mannum and Wellington is a series of swamp and overflow areas which have been reclaimed by Government and private agencies.

The first such reclamation was made in 1881 by Sir W. F. D. Jervois, then Governor of the State, and was followed by other large holdings being reclaimed by private enterprise. This successful conversion of almost waste land to highly productive areas led, in 1904, to the inclusion of the reclamation and subdivision of the remaining swamp areas in the State's policy of land settlement. In 1929 most of the areas which were suitable for settlement and which were not being developed privately had been reclaimed and settled.

Although these reclaimed areas contain some orchards, vineyards, and market gardens they are devoted principally to the growing of green fodder for dairy herds and sheep flocks. These lands are watered by gravitation and surplus

water is run into main drains from which it is pumped into the river. Approximately 950 acres of highlands adjacent to reclaimed areas have also been developed for the production of fodder crops through the use of spray irrigation.

### Irrigation Areas, South Australia

Area Irrigated	1964-65	1965-66	1966-67	1967-68
	Acres			
Government controlled :				
War Service schemes (1939-45 War)	8,080	8,083	8,067	8,069
Other .....	30,715	30,919	30,968	31,036
Non-Government (a):				
Trusts, boards and association areas .....	10,889	10,912	10,912	17,784
Private schemes .....	19,935	22,567	24,711	42,491

(a) Areas below Mannum on the River Murray are not included prior to 1967-68.

Further details of the 39,105 acres irrigated in Government-controlled schemes in the year 1967-68 are as follows:

Area Irrigated	Highland Areas		Reclaimed Areas	Total
	Surface Reticulation	Spray Irrigation		
	Acres			
War Service schemes (1939-45 War)	4,053	4,016	—	8,069
Other .....	18,788	3,303	8,945	31,036
Total .....	22,841	7,319	8,945	39,105

### THE RIVER MURRAY AGREEMENT

In the earlier years there were great variations in the flows of the River Murray and its tributaries resulting from extremely variable rainfall in the catchment areas. The resulting droughts and floods were a considerable impediment to the proper functioning of the irrigation areas.

In 1915 the Commonwealth River Murray Waters Act was passed ratifying and providing for the carrying out of an agreement entered into between the Parliaments of the Commonwealth and the States of New South Wales, Victoria and South Australia. The River Murray Agreement provided for the construction of works and for the allocation of water between the three States concerned. Subsequently, in 1935, State legislation was enacted to give effect to the agreements entered into between the Commonwealth and the States of New South Wales, Victoria and South Australia vesting the construction and control of River Murray works in the River Murray Commission and fixing a method of contributing to the costs and expenses of those works.

Works, to regulate the flow and control of the level of the River Murray, have included the construction of a number of storage areas and the erection of a series of locks and weirs. By 1928 Lake Victoria, in New South Wales adjacent to the South Australian border, had been converted into a large storage area supplying water for the South Australian irrigation settlements. The major storage area, the Hume Reservoir above Albury, was completed in 1936. Further works, the last being completed in 1961, have doubled the original capacity to 2.5 million acre-feet. Except for that held in various lock pools, no water from the Murray is stored in South Australia. However, in 1962 agreement was reached for the construction of a reservoir of approximately 5 million acre-feet and covering 503 square miles with its dam at Chowilla, just inside the State border. Tenders were received during 1967 for the embankment, spillway and lock features which were considerably in excess of the original estimate. On 30 June 1967 work on the project was suspended pending further review by the River Murray Commission into the cost structure and certain technical problems which arose. Early in 1969 the River Murray Commission recommended that an alternative dam be built at Dartmouth in Victoria before further consideration be given to the completion of the Chowilla dam. At present the recommendations of the Commission are being studied by the Governments involved.

Between 1922 and 1930 six locks and weirs were erected between Blanchetown and the Victorian border. In addition five barrages have been placed at the Murray mouth to prevent the ingress of salt water from the sea and to maintain a higher level in the River for the use of the reclaimed areas. These barrages were completed in 1940.

### DRAINAGE

With the exception of the reclaimed areas along the lower Murray, already discussed in the previous section, and certain works associated with metropolitan development, drainage schemes in South Australia are confined to the south-east corner of the State. The topography of this area reveals a series of fertile valleys or flats interspersed by low infertile ranges running parallel to the sea and thus preventing the natural drainage of the land. In consequence considerable sums of money have been expended in constructing drainage schemes to reclaim these areas.

The first major drainage scheme was commenced in 1863 and completed in 1885. This scheme, the Millicent Drainage System, reclaimed 100,000 acres of land at a cost of \$300,000, this cost subsequently being included in the land allotment price. The system is maintained by the Millicent Drainage Trust from rates levied on landholders.

Following this early success the Government undertook the construction of further drains during the next sixty years. These drains were constructed under three sets of conditions: *National Drains* were constructed at Government expense, the cost being absorbed in the price of the land when sold; *Petition Drains* were constructed on requests from landholders who agreed to repay the full cost to the Government over a period of forty-two years; *Scheme Act Drains*, commenced in 1908, provided for the Government and the landholders to share the cost, the landholders share being repayable over forty-two years. After the Scheme Act Drains had been completed it was found that the cost exceeded the benefit derived, and subsequently, following a royal commission, the landholders' liability was reduced.

Legislation in 1948 marked a new stage in the development of south-eastern drainage. Previously attention had been devoted to the construction of a system of drains removing large quantities of water from general areas and providing above all for the rapid removal of floodwaters. By 1948, 430 miles of drains had been constructed at a capital cost of \$1,441,752. However in 1948, with the establishment of the Western Division Drainage Scheme, emphasis was placed on a complete drainage programme as achieved by the earlier Millicent scheme. The Western Division Drainage Scheme, which aimed at the comprehensive drainage of 400,000 acres of land between the Millicent and Kingston districts, has now, with the exception of some minor work in the northern region, been completed.

In 1960 the Eastern Division Drainage Scheme, for the drainage of 727,000 acres of flats lying between Kalangadoo and forty miles north of Lucindale, was commenced and construction on this scheme is still progressing.

Under the schemes introduced since 1948 landholders are required to repay an amount based on a 'betterment assessment' of their property. As in the other schemes this amount can be repaid over forty-two years.

At 30 June 1968, 860 miles of drains (excluding the Millicent scheme) had been constructed at a capital cost of \$17,627,600. These drains vary considerably in size from only a few feet to over 200 feet bottom width.

In addition to new construction, continual attention must be paid to the prevention of silting and of weed growth and to the upkeep of over 500 bridges. Rates are levied on landholders to meet the costs of such maintenance. The closer settlement resulting from the drainage schemes has, in many areas, necessitated the construction of new bridges.

The system is administered by the South-Eastern Drainage Board under the South-Eastern Drainage Act, 1931-1959.

### 8.3 ROADS

Roads in South Australia are officially classified as either main roads, being those proclaimed as such under the provisions of the Highways Act, or district roads.

Main and district roads within local government areas are vested in the various local governing authorities who primarily are responsible for construction and maintenance works within their respective areas. However, there is provision in the Highways Act for the Commissioner of Highways to construct, reconstruct, and maintain important roads after due notice has been given, and in practice most of the roads carrying heavy traffic are constructed and maintained by the Highways Department.

In areas outside the control of local government authorities road works are carried out by the Highways Department. At one time almost all of this work was performed by the Engineering and Water Supply Department, using equipment already in those areas, but in July 1961 the Highways Department assumed direct responsibility for roads in the Western Division including the Eyre Highway to the Western Australian border. In January 1967, road work in other unincorporated areas was taken over when additional expenditure in those areas was planned.

Funds used for road works in South Australia are derived from three main sources, *viz* the net proceeds of fees imposed by the State Government for



the registration of motor vehicles and the licensing of drivers, grants from the Commonwealth Government, and rates levied by local government authorities.

Commonwealth legislation in force to 30 June 1969 stipulated that not less than 40 per cent of the Commonwealth Aid Roads Grants should be expended on roads in rural areas other than highways, main roads and trunk roads: from 1 July 1969 a decreased percentage of Commonwealth Aid Roads Grants, but an increased sum of money, is to be spent on rural roads. State funds also are made available to local government authorities for construction and maintenance works generally and particularly for work on the more important district roads. In approved cases the Highways Department assists by way of interest-free loans the purchase, by local authorities, of road-making equipment. Some local government authorities, having adequate resources of manpower and equipment, undertake specific work on behalf of, and financed by, the Highways Department. The Department provides technical advice when requested by a local government authority.

The following table shows the length of main and district roads according to type of surface at 30 June 1969 as advised by the Highways Department.

**Main and District Roads: Type of Surface, South Australia**

*At 30 June 1969*

Type of Surface	Main Roads	District Roads	Total
	Miles		
Bitumen or concrete.....	4,606	4,556	9,162
Gravel or crushed stone .....	3,296	15,296	18,592
Formed only .....	210	7,080	7,290
Unformed .....	44	39,927	39,971
<b>Total .....</b>	<b>8,156</b>	<b>66,859</b>	<b>75,015</b>

The unformed roads shown above include tracks in localities outside of local government areas, mainly routes to and between station homesteads and not on land reserved for roads.

In closely settled areas, particularly in the metropolitan area and country towns, most roads are surfaced with bituminous concrete or by bituminous penetration of a macadam base. In rural districts where traffic is light roads may be formed of natural materials or be only lightly gravelled but the more important country roads are constructed of gravel or crushed rock and are improved, as traffic warrants, by the addition of a bituminous seal.

Since the 1939-45 War the tremendous increase in road traffic has necessitated the reconstruction and widening of many major roads, particularly those in and near the metropolitan area of Adelaide. Major examples of this type of work are the main south-east road from Glen Osmond to Crafers, the Main North Road to Gawler and the South Road. In addition to this work and extensive road construction in new housing areas many country roads have been greatly improved.

A detailed historical survey was included on pages 257-9 of the *South Australian Year Book* 1966.

**FUTURE DEVELOPMENT**

The Town Planning Committee of South Australia, appointed by Parliament in 1955, presented its report in 1962 covering various aspects of the anticipated development of metropolitan Adelaide to the year 1991. The report contained alternative proposals but favoured the improvement of public road and rail transport and the construction of a limited number of freeways to relieve congestion on existing major roads by catering for a large volume of fast 'through' traffic including express buses.

Freeways are roads without frontage access and with cross traffic carried under or over the through traffic by means of bridges. Access to such roads is permitted only at 'interchanges'.

The Committee recommended the following six freeways totalling slightly less than 100 miles:

- (1) Central North-South Freeway from Gawler to the Yankalilla road east of Maslin Beach.
- (2) Freeway around the city of Adelaide.
- (3) City of Adelaide to Port Adelaide.
- (4) City of Adelaide to Modbury.
- (5) Modbury to Port Adelaide.
- (6) Crafers to Bridgewater.

Work on the Crafers to Bridgewater freeway was commenced in 1966 and it was subsequently decided that this project should include re-routing of the road in the Measday Hill area west of Crafers and that the freeway should extend eastward to Verdun. Work in the area from Measday Hill to Stirling was completed in June 1969. The route from Stirling to Verdun, at the foot of Germantown Hill, will be completed not earlier than December 1971. Ultimately, in the progressive development of the principal route to Melbourne it is intended to extend the South East freeway from Verdun to Callington. Also as part of the development of this route, a new road bridge at Swanport south of Murray Bridge and an associated by-pass road are planned for completion in 1972.

Decisions about the extent and exact routes of other freeways were deferred, to be subject to consideration of the findings of the Metropolitan Adelaide Transportation Study (see pages 318-21). However, for several years the Highways Commissioner has been acquiring land along some probable routes where such action was considered necessary, to prevent development which might make the subsequent construction of freeways economically impracticable.

Other studies have indicated that road traffic is increasing at an approximate rate of 7 per cent per year which is roughly equivalent to a 100 per cent increase during a ten-year period.

**ROAD NEEDS SURVEY**

During 1968 the National Association of Australian State Roads Authorities (N.A.A.S.R.A.) in association with the Commonwealth Bureau of Roads conducted a survey of 'road needs' throughout Australia, covering the backlog of work existing to June 1969 and additional work necessary for each of the five-year periods ending in June 1974 and 1979. Findings relating to South Australia are summarised in the following table.

Nature of Work	Unit	Backlog at June 1969	Additional Work Needed	
			July 1969 to June 1974	July 1974 to June 1979
New freeways .....	miles	11.9	2.9	6.7
Divided highways .....	miles	38.5	3.6	1.9
Undivided highways and major realignment of existing highways .....	miles	1,612	557.2	213.4
Duplication of existing highways .....	miles	55	5.7	—
Improvement of existing pavements .....	miles	4,809	3,743.2	2,939.0
New or reconstructed bridges .....	No.	573	11	1
Railway level crossing grade separations (overways or subways) .....	No.	5	1	—
Other railway level crossing improvements	No.	515	88	89

For the purpose of this survey a new classification of roads was devised and this classification was substantially reflected in the conditions attaching to expenditure of Commonwealth Aid Roads Grants from July 1969.

The main features of the classification are distinctions according to location (type of area), and classes of roads. Four main areas are specified; capital cities, major provincial urban, other urban, and rural. The seven classes of road are stated and defined below:

*Class 1—Inter-regional,*

Roads in rural areas providing for the long distance movements throughout Australia generally between State capital cities.

*Class 2—Through,*

Roads in rural areas not being Class 1 whose main function is to form the principal avenue of communication for movements;

- (i) between a State capital city and adjoining States and their capital cities,
- (ii) between a State capital city and key towns,
- (iii) between key towns.

*Class 3—Connecting and Distributing,*

Those roads in rural areas not being Class 1 or 2 whose main function is to form an avenue of communication for movement;

- (i) between important centres and the Class 1 and 2 roads and/or key towns,
- (ii) between important centres.

*Class 4—Land Access,*

Those roads in rural areas whose main function is to provide for movements between communities or individual properties and roads of higher classification.

*Class 5—Special Purpose,*

Those roads in rural areas whose main purpose is to provide almost exclusively for one activity or function (*e.g.*, tourist road, timber getting road, etc.), or, a road whose main purpose is to allow or stimulate productive development of an area.

**Class 6—Arterial,**

Those roads in urban areas whose main function is to perform as the principal arteries for massive 'through' traffic movement or which are extensions into urban areas of Class 1 or Class 2 roads.

**Class 7—Sub-arterial,**

Those roads in urban areas whose main function is to supplement the Class 6 roads in providing for 'through' traffic movements or which distribute traffic between the Class 6 roads and the local street systems.

Work is proceeding on the identification of roads in South Australia according to these classifications.

**METROPOLITAN ADELAIDE TRANSPORTATION STUDY**

In 1962 the State Government acted on the recommendation of the Commissioner of Highways and the Town Planner to establish a Joint Steering Committee to investigate the need for, and subsequently to undertake, the Metropolitan Adelaide Transportation Study (M.A.T.S.). The Joint Steering Committee comprised the heads of the five agencies which participated in the study, namely, the State Planning Office, the South Australian Railways, the Municipal Tramways Trust, the Adelaide City Council and the Highways and Local Government Department.

Recognising that the staff of the local agencies had limited experience in modern transportation planning techniques, the Joint Steering Committee recommended the appointment of competent transportation planning consultants who were subsequently engaged in 1965.

The broad objective of the Study was 'to devise a workable, acceptable and adaptable plan to guide traffic and transport development of Metropolitan Adelaide up to the year 1986. The Study must be conducted and presented in such form that continuing surveillance, refinement and amendment is practicable both during the period up to 1986 and beyond'. General goals for the study were that the Plan should guide and where necessary direct the development of transportation facilities and services in the Adelaide Metropolitan Area in such a way as to preserve and enhance the social and economic welfare of the community as a whole and be within the financial capabilities of the community.

Within these broad principles the following guidelines were established to direct the Study:

- (i) Maximum use should be made of existing facilities.
- (ii) The Plan should support a pattern of land use which will minimise travel needs in the future.
- (iii) The Plan should be aimed at maintaining and enhancing urban property values.
- (iv) All major traffic generators (shopping centres, parking stations, etc.) should be well served.
- (v) The Plan should be aimed at maintaining and enhancing the vitality of the entire Metropolitan Area with particular emphasis on the Central Business District.
- (vi) Implementation of the Plan should promote orderly development and growth of the Metropolitan Area with minimum disruption of the urban structure consistent with the objective of achieving efficient movement.

- (vii) Total cost to the community should be justified by sound economic analysis and the Plan should be realisable within the financial resources likely to be available.

The M.A.T.S. report was released in August 1968 and the Government declared a six months period for public examination. The public generally, and local authorities were invited to make submissions for the consideration of the Government before a decision was made on the proposals. In February 1969 the Government approved of the proposals in principle, although a number of projects were deferred pending further investigation. As a result of this action abandonment of several projects (including 10 miles of freeway through eastern and southern suburbs and the hills, 4 miles of foothills expressway, and a rail diversion in the southern suburbs) was announced on 31 July 1969 while other deferred projects have still to be investigated.

The M.A.T.S. Committee made a detailed study of transportation in the Adelaide Metropolitan Area and the report included recommendations with particular reference to public transport, highways and roads, and transport facilities in the Central City Area.

### **Public Transport**

The Plan envisages the development of public transport to the maximum extent that is economically feasible. The public transport plan is co-ordinated with the highway plan to form a balanced transportation system. With an integrated rail and bus service, travel is facilitated between most residential centres and centres of employment, education, commerce and recreation.

Some important aspects of the Plan are:

- (i) Rail rapid transit serving north-west, north, south-east and south areas.
- (ii) An underground rail link through the Central City Area.
- (iii) Extension of the Hallett Cove rail service to Christie Downs.
- (iv) Express buses operating on the proposed Modbury Freeway serving commuters from the Tea Tree Gully area.

Primarily the rail system is seen as most suited to serve commuters from outer suburbs whereas inner areas can be served more adequately by bus. It was recommended that certain branch-line rail passenger services should be discontinued and replaced by bus services.

The proposals for bus services visualise several types of operation including an express bus service between the Central City Area and outer areas not served by rail; an express bus service from outer areas with passenger transfer to rail at an intermediate station; local bus services with frequent stops and routes radiating from the Central City Area or from regional centres; feeder bus services to outer rail stations and crosstown bus services operating between inner suburbs but not passing through Central City Area.

### **The Highway Plan**

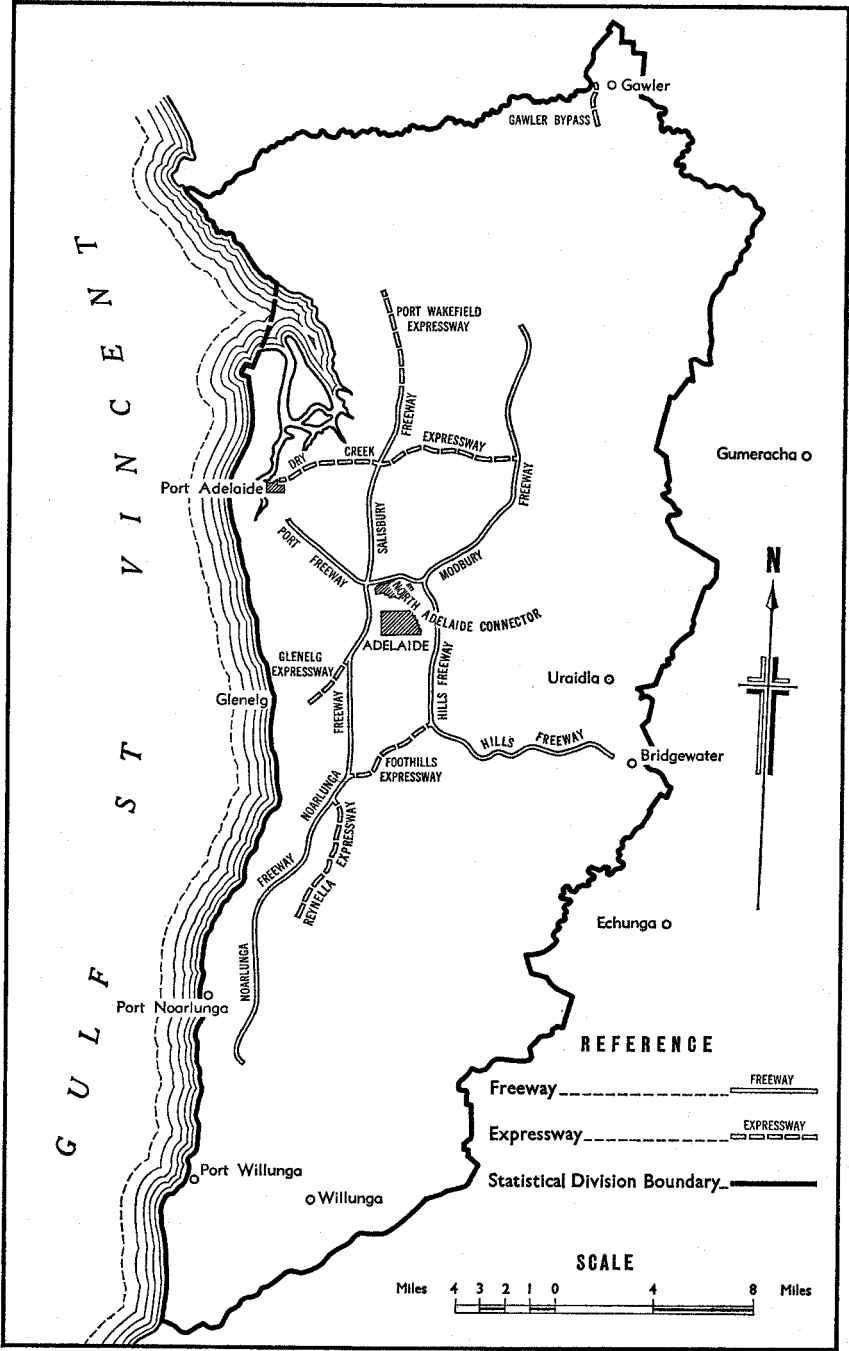
The arterial road plan envisages the widening and improvement of 240 miles of existing roads and the construction of 35 miles of additional new roads to improve and extend the arterial network. Also proposed is the elimination of twenty road/rail level crossings, major intersection improvements at thirty locations and the construction of a new bridge across the Port River at Port Adelaide.

The arterial road system in the inner area is based on a series of radial roads, complemented by a circumferential system, while in the outer areas the arterial road system is based on a predominantly rectangular grid pattern.

PHYSICAL DEVELOPMENT

METROPOLITAN ADELAIDE  
TRANSPORTATION STUDY

Recommended Freeways and Expressways



MAP 14

The recommended freeway system provides for freeway connections from the inner areas to Modbury (extending to Elizabeth), Crafers (Hills Freeway), Noarlunga, Port Adelaide and Salisbury (Port Wakefield Road), the total length of freeways recommended being 60 miles. The freeway system is supported by four expressways of a total length of 19 miles.

### **Proposals for the Central City Area**

A major objective of the Study was to preserve the Central City Area as the major business, entertainment and cultural centre of the Metropolitan Area. Towards this objective the M.A.T.S. Plan proposes improved access to the central area, improved parking (long and short term) and better public transport.

The M.A.T.S. proposals do not cover specific parking policies or the location of parking facilities; estimates of parking demand have been made, and the general parking policies and programmes of the Adelaide City Council have been endorsed.

Proposed improvements to public transport in the Central City Area include a railway subway under King William Street connecting the lines on the north of Adelaide with those on the south, with stations at Rundle Street, Victoria Square and Gilles Street.

### **Cost**

The total cost of implementing the M.A.T.S. proposals was estimated at \$574 million consisting of \$436.5 million for roads, \$79.1 million for rail services, \$28.4 million for bus services and \$30.0 million for parking facilities. Cost estimates have generally been based on rates current at the date of the Report.

## **RESEARCH**

Because of the great area of South Australia a wide variety of climatic and soil conditions exists within the State. Special sections of the Highways Department are engaged in constant investigation and testing of soils, materials, and construction methods to ensure that a high standard of road construction is maintained and that methods are adapted to the needs of particular areas.

South Australia contributes to Australian road development through its active participation in the National Association of Australian State Road Authorities. Specialist committees of the association deal with bridge design, materials research, traffic engineering, bituminous pavements, plants and equipment, and advance planning. The association in 1960 established the Australian Road Research Board whose functions include the co-ordination and organisation of road research.

## **ROAD FINANCE**

As indicated earlier, the three main sources of road finance are:

- (1) State motor vehicle taxation and drivers licence fees.
- (2) Commonwealth grants.
- (3) Property rates and other levies imposed by municipal and district councils.

Finance received from the first two sources is controlled by the Commissioner of Highways. The Highways Act provides that fees received for vehicle registrations and drivers' licences, less cost of collection, should be credited to the Highways Fund. The fund is credited also with hawkers licence fees collected under the Hawkers Act, 1934-1960; interest on and repayments of advances made to local government authorities for roadworks and drainage schemes and for the purchase of machinery; special contributions from the Municipal Tramways Trust under the Highways Act; contributions from local government

authorities towards the cost of lighting Anzac Highway and Port Road; Road Maintenance (Contribution) Act charges and other minor sundry receipts.

**Highways Department, South Australia**  
*Receipts and Payments*

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
<b>RECEIPTS (\$'000)</b>					
Motor vehicle registrations, licences, fees, fines, etc. ....	9,981	10,731	11,206	11,506	11,858
Road Maintenance Charges .....	—	1,426	1,903	2,070	2,324
Commonwealth Aid Roads Grants:					
For rural roads .....	7,272	6,988	6,611	7,603	7,478
For other roads .....	6,066	7,915	9,413	9,620	10,906
Loans from State Government .....	950	—	—	—	—
Repayments of, and interest on, advances to local authorities .....	991	1,144	1,293	1,263	1,196
Other .....	131	127	144	162	172
<b>Total .....</b>	<b>25,391</b>	<b>28,330</b>	<b>30,570</b>	<b>32,225</b>	<b>33,934</b>
<b>PAYMENTS (\$'000)</b>					
Construction and reconstruction of roads, bridges, etc. ....	19,517	18,409	20,912	22,834	20,799
Maintenance of roads, bridges, etc. ....	5,497	5,198	5,375	6,000	7,128
Interest, debt redemption, etc. ....	512	1,164	1,167	514	518
Advances to local authorities .....	1,650	1,126	1,376	1,091	1,386
Net purchases of land, buildings, plant, equipment, materials, etc. ....	801	1,080	902	1,536	2,238
Other (a) .....	Cr.263	Cr.162	312	(b)1,257	(b)868
<b>Total .....</b>	<b>27,715</b>	<b>26,816</b>	<b>30,044</b>	<b>33,231</b>	<b>32,936</b>

(a) This item includes provision for leave and for plant overhauls which may be a negative figure in some years.

(b) Includes \$1,000,000 in 1966-67 and \$240,000 in 1967-68, representing repayment to revenue under Section 31 (a) of the Highways Act.

The Local Government Act provides for grants-in-aid to be paid from the Highways Fund to local government authorities for expenditure on roads, other than main roads, and related works.

From 1923 to 1930 Commonwealth road grants were conditional upon *pro rata* expenditure by the States and work was subject to Commonwealth inspection. From 1931 to 1958 the total amount of Commonwealth Aid Road Grants to the States was determined as a proportion, varied from time to time, of Commonwealth petrol taxation. From 1959 these grants have borne no direct relationship to any particular item of revenue. For conditions and details of the method of dividing total Commonwealth road grants between the States from 1923 to 1963-64 reference should be made to the *Official Year Book of the Commonwealth of Australia* No. 38 pp. 787-8, No. 41 p. 621, No. 46 p. 838 and No. 49 p. 934.

The South Australian share of Commonwealth Aid Roads Grants for the five years to June 1969 was approximately \$86 million, of which \$66.5 million had been received at 30 June 1968. This \$86 million represented approximately 11.5 per cent of the total grants which were distributed as follows: 5 per cent to Tasmania and the remaining 95 per cent to the mainland States; one-third according to population, one-third according to area and one-third proportionately to the number of motor vehicles registered. Portion of these grants is subject to matching expenditure by the States.



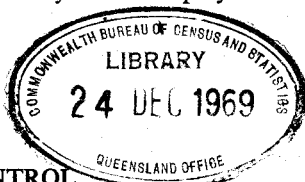
Commonwealth Aid Roads Grants for the five years 1969-70 to 1973-74 were announced after the Premiers' Conference in March 1969. A basic sum of \$1,200 million was allocated to the various States according to a formula which took into account both the formula applied in the preceding five years and principles of distribution recommended by the Commonwealth Bureau of Roads after consideration of results of the Road Needs Survey already mentioned. A supplementary amount slightly exceeding \$52 million is to be shared by South Australia, Western Australia and Tasmania to ensure that all States received grants at least 50 per cent higher than for the preceding five years. However, the \$129 million allocated to South Australia for the five years to 1973-74 represents only 10.3 per cent of total grants compared with 11.5 per cent of grants for the preceding five years.

Conditions attaching to these grants relate to the expenditure of specified sums on different classes of roads in particular areas, with a general proviso that State expenditure on roads shall increase proportionately to the increase in numbers of motor vehicles registered.

The linking of expenditure of Commonwealth Aid Roads Grants with the classification of roads discussed earlier will necessitate examination of the financial relationships between Adelaide City Council, previously responsible for all work on roads within its area, and the Highways Department as administrator of the roads grants: it is apparent that some arterial roads (and possibly sub-arterial and other relevant classes) are located within the Adelaide City Council area.

Exact figures are not available for total expenditure in South Australia on the construction, reconstruction, and maintenance of roads, streets, bridges, ferries, and associated works. During five recent years approximate total expenditure by State and local government authorities has been: 1963-64, \$40 million; 1964-65, \$40 million; 1965-66, \$44 million; 1966-67, \$48 million; and 1967-68, \$49 million. These figures include the cost of land purchased for new roads including future freeways and for road widening, and charges for depreciation of plant and machinery. Local government figures used to derive the totals include expenditure which is subsequently recouped from the public and expenditure on footpath maintenance and stormwater drainage.

The biggest single element of roads expenditure which is omitted from the above figures is the cost of work carried out under the provisions of the Planning and Development Act, 1966-1967 which requires persons and authorities (including the South Australian Housing Trust) who subdivide land for housing to provide roads to a certain specification. The actual work is sometimes performed by local government authorities at the expense of the subdividers: in such cases the costs of construction are included in the figures above, but when such roads are constructed by private contractors or by direct employees of the subdivider few details are available.



## 8.4 RAILWAYS

### OWNERSHIP AND CONTROL

Railway systems in South Australia are operated by both the State and Commonwealth Governments.

In 1851 a 'Board of Undertakers' was appointed in connection with the construction of the Adelaide to Port Adelaide railway. In 1856 a Board of Railways Commissioners was appointed to control South Australian railway

operations. This Board was abolished in 1859 and from then until 1887 control was vested in the Commissioner of Public Works. The South Australian Railways Commissioners Act of 1887 gave almost complete authority for management and administration to three Railways Commissioners, reserving (as in the past) financial control to Parliament. The powers of the three Commissioners passed to one Commissioner in 1892. The present South Australian Railways Commissioners Act, 1936-1965, under which the Commissioner is appointed for a period of seven years incorporates many of the provisions of the 1887 Act, including those for financial control.

Management of all Commonwealth Railways is vested in a Commonwealth Railways Commissioner.

In South Australia the only private railways open to general traffic are the lines owned by the Broken Hill Proprietary Co. Ltd: from Iron Knob and Iron Baron to Whyalla (fifty-one miles) used for the carriage of iron ore; and from Coffin Bay to Port Lincoln (twenty-five miles) used for the carriage of limestone. The construction of the latter line was completed in early 1967.

### HISTORICAL SUMMARY

Much of the basic work of establishing the railway network which serves South Australia was concentrated in two comparatively brief periods, from about 1877 to 1887 when approximately 1,200 miles of lines were constructed, and from 1910 to 1917 when about 1,500 miles were added. A number of scattered lines totalling roughly 300 miles had been constructed before 1877.

During the eleven years to 1887 rail communication with the eastern States was established; the rich ore deposits at Broken Hill were tapped; a line was built through northern pastoral areas toward the Northern Territory; and railways from outports to their hinterlands (predominantly agricultural but more pastoral in the South East) were extended and linked with arterial services centred on Adelaide. During the following twenty-two years only 200 miles of new lines were opened. Then in an eight-year period railways were constructed to facilitate the agricultural development of Eyre Peninsula and the Murray Mallee lands, and the Commonwealth Railways built a line to Western Australia.

Since 1917 route mileage open has increased by about 600 miles only. The emphasis during recent years has been upon conversion of 3 feet 6 inch lines either to 4 feet 8½ inch directly or to 5 feet 3 inch as an interim to possible ultimate conversion to the standard gauge.

Only a small portion of the Adelaide metropolitan area is served by railways. The main trunk routes pass through northern and southern suburbs; the line to Willunga, although closed to passenger traffic beyond Hallett Cove, serves south-western suburbs; the Port Adelaide line, its extensions to Semaphore and Outer Harbor, the branch line to Grange, and spur lines to industrial establishments provide better coverage in north-western suburbs than is achieved elsewhere in Adelaide. For many years two railways linked Adelaide and Glenelg: in 1929 the route *via* North Terrace and Richmond was closed and the King William Street route was converted to its present use as a tramway.

A more detailed historical survey was included on page 263 of the *South Australian Year Book* 1966.

Lines operated by the Commonwealth Government in South Australia at 30 June 1968 were: 3 feet 6 inch gauge; Stirling North to Hawker, 61 miles,

and Marree to the Northern Territory Border, 364 miles, and 4 feet 8½ inch gauge; Port Pirie Junction to Western Australian Border, 653 miles, and Stirling North to Marree, 217 miles.

The table which follows shows route mileage of railways open for traffic for every tenth year from 1856 and for each of the last five years.

**State and Commonwealth Government Railways**  
*Gauges, Route-mileage open in South Australia*

Date	5ft 3in Gauge	4ft 8½in Gauge	3ft 6in Gauge	Total (a)
31 December				
1856.....	7	—	—	7
1866.....	56	—	—	56
1876.....	133	—	137	270
1886.....	495	—	716	1,211
1896.....	493	—	1,229	1,722
1906.....	594	—	1,238	1,832
30 June				
1916.....	977	361	1,688	3,026
1926.....	1,238	598	1,739	3,575
1936.....	1,451	598	1,676	3,725
1946.....	1,480	654	1,665	3,799
1956.....	1,622	654	1,540	3,816
1964.....	1,655	871	1,291	3,817
1965.....	1,649	871	1,272	3,792
1966.....	1,649	871	1,256	3,776
1967.....	1,651	871	1,254	3,776
1968.....	1,651	870	1,253	3,774

(a) Excluding private railways.

Mileage of the Goolwa-Port Elliot line which was completed in 1854, and its extensions to Victor Harbor (1864) and Strathalbyn (1869) has been excluded from the above table for years prior to 1884-85, when the route was converted from horse to locomotive traction.

#### STANDARDISATION OF RAIL GAUGES

The existence in South Australia of 3 feet 6 inch, 4 feet 8½ inch, and 5 feet 3 inch systems has already been noted. For many years railway administrators have been greatly concerned about the increased costs and decreased efficiency associated with the transshipment of goods and passengers and with the provision, maintenance and operation of different sets of rolling stock. During recent years with the rapid development of road and air transport facilities there has been increasing pressure for standardisation of rail gauges in the interests of efficiency and economy of operation of transport services as a whole.

In 1946 an agreement was signed between the Commonwealth Government and the States of N.S.W., Victoria, and South Australia regarding the standardisation of railway gauges in their respective States. This agreement was subsequently ratified by the Governments of the Commonwealth, Victoria and South Australia but not by the N.S.W. Government. After some time had elapsed and New South Wales had failed to ratify the agreement, the Commonwealth

Government decided to enter into a separate agreement with South Australia and the necessary legislation was enacted in 1949 by the State and Commonwealth Parliaments.

It was agreed that the whole of the South Australian Railways system, except the 3 feet 6 inch gauge lines on Eyre Peninsula, be converted to the standard 4 feet 8½ inch gauge and the Commonwealth would provide a standard gauge railway from Port Augusta to Darwin. The Commonwealth agreed to meet the full cost of work on Commonwealth Railways and to provide all finance (of which South Australia must repay 30 per cent over a period of years) for the conversion of State railways. By an amendment to this agreement the conversion of the South-East system from 3 feet 6 inch to 5 feet 3 inch, completed in 1959 at a cost of \$10 million, was accepted as an interim to final conversion to 4 feet 8½ inch. Lines from Beachport to Millicent and Wandilo to Glencoe were closed in 1956 and 1957 respectively as traffic did not justify conversion.

As part of the agreement and at a cost of \$24.4 million, the Commonwealth has built a 4 feet 8½ inch line from Stirling North to Marree to replace that portion of the old railway to Alice Springs. From Stirling North to Brachina this standard gauge line follows a new route; the old railway has been closed from Hawker to Brachina but from Stirling North through Quorn to Hawker, still as a Commonwealth line, it remains open but not for general traffic.

In March 1956 a committee of members of the Commonwealth Parliament was formed to consider whether it was desirable to confine standardisation to the main trunk routes. In October 1956 the committee recommended that 4 feet 8½ inch lines be provided from Wodonga on the Victorian-N.S.W. border to Melbourne, from Broken Hill to Adelaide *via* Port Pirie, and from Kalgoorlie to Fremantle. Conversion of the Victorian line for dual gauge operation (both 5 feet 3 inch and 4 feet 8½ inch) was completed in 1962. In that year work commenced on the Western Australian sections and these will be completed during 1969.

In 1963 the Commonwealth Government decided to proceed with the standardisation of the Port Pirie-Broken Hill railway as part of the 1949 agreement. By 30 March 1969 the standard gauge main line was continuous from Port Pirie to Cockburn on the New South Wales border. Work was well advanced on the major station yards at Port Pirie, Peterborough and Gladstone and had commenced in the New South Wales marshalling yards at Broken Hill. It is expected that the project will be completed by January 1970.

During 1967 agreement was reached between the Commonwealth, New South Wales and South Australia to link Cockburn and Broken Hill along a new line of thirty miles instead of converting the existing thirty-five miles owned and operated by the Silverton Tramway Company to the standard gauge. The new line will be owned and operated by the South Australian Railways. Early in March 1969 tenders were received for the construction of earth works, bridges, culverts and tracks on this section. This work also is to be completed by January 1970. Thus it is anticipated that the standard gauge link between Sydney and Fremantle (*via* Broken Hill) will be completed early in 1970.

Before the financial provisions of the railways standardisation agreement can become effective in relation to any specific project Commonwealth Government acceptance of that project is necessary. Early in August 1969 it was announced that the Commonwealth and South Australian Governments had agreed on the terms of reference for a feasibility study on standardisation of the Adelaide-Port Pirie line and the carrying of traffic on existing narrow gauge lines affected by standardisation.

## METROPOLITAN ADELAIDE TRANSPORTATION STUDY

The recommendations of the Metropolitan Adelaide Transportation Study (M.A.T.S.) include the linking of the railway lines to the north and south of Adelaide by a subway under King William Street, an express bus service from outer areas with passenger transfer to rail at an intermediate station and feeder bus services to outer rail stations. Other details of the M.A.T.S. report are included in Part 8.3, Roads.

## 8.5 HARBOURS AND AERODROMES

## HARBOURS

The State of South Australia has a coastline more than 2,400 miles in length including Kangaroo Island; the eastern portion of the mainland has three great indentations—Encounter Bay, Gulf St Vincent, and Spencer Gulf. Although the gulfs were a barrier to transport overland, especially to Eyre Peninsula, they offered many harbours for shipping and it was by this means that early settlers were able to receive their supplies and send their products to market.

Although there are many seaports in South Australia, at present only twenty-six are classified as actively engaged in meeting the requirements of shipping interests. Of these twenty-six harbours, nineteen have State-owned wharves or jetties and seven have privately-owned wharves or jetties.

The Broken Hill Pty Co. Ltd owns and operates bulk handling facilities at Ardrossan, Rapid Bay, Whyalla and Proper Bay, while the Colonial Sugar Refining Co. Ltd owns and operates a bulk loading installation at Ballast Head, Kangaroo Island. The Commonwealth Railways operates the wharf at Port Augusta on behalf of the Commonwealth Government, and the Port Stanvac oil terminal is owned by Petroleum Refineries (Aust.) Pty Ltd. The State also maintains jetties or wharves for promenade and fishing purposes at forty-nine ports no longer used by commercial shipping. A total of ten jetties are leased to district councils.

There are five deep-sea ports operated by the State, namely Port Adelaide, Port Pirie, Port Lincoln, Thevenard, and Wallaroo, whilst overseas vessels are also accommodated at Whyalla and Ardrossan. A project for the redevelopment of Thevenard harbour entailing the dredging of a deeper channel and reconstruction of the jetty is expected to be commenced during 1969. The construction of a further deep-sea port near Giles Point, Yorke Peninsula, for the bulk loading of grain is in progress. The official name of this new outport will be Port Giles. A boat-haven has been established on Lake Butler at Robe and a wharf provided in the lake as a fish landing point for the fishing fleet. Slipways have been provided at several ports throughout the State.

## CONTROL OF HARBOURS

In the early days of the State many of the wharf frontages were alienated from the Crown but subsequently the re-establishment of public control of all wharves became a public issue. Following a report by a royal commission in 1911, the Harbours Act, 1913 was enacted providing for the acquisition, by the

Crown, of wharves, water frontages and other properties; the creation of a board called The South Australian Harbors Board; for vesting in this Board the wharves, water frontages, and other properties acquired by or vested in the Crown. The Board appointed consisted of three members called Harbors Board Commissioners, who held office for a term of five years. However, the Harbors Act Amendment Act, 1966, provided for the abolition of the Harbors Board and the establishment of a Department of Marine and Harbors with all property, rights, powers, functions and duties transferring and vesting in the Minister of Marine; these provisions came into operation on 20 March 1967.

The Minister of Marine exercises his power under the Harbors Act, 1936-1968 and the Marine Act, 1936-1968, within all harbours (including the River Murray) in the State, over navigation therein and over all publicly-owned harbour works; controls all lights, buoys, beacons and other sea marks in harbours; constructs and maintains harbour works and installations and provides and operates bulk loading plants at deep-sea ports.

Accommodation constructed for fishing boats pursuant to the Fisheries Act, 1917-1967, is under the control of the Minister of Marine.

The tonnages handled by the Department in 1967-68 were 6,673,917 tons (including 440,086 tons of general cargo handled at private ports) or approximately 40 per cent of the total tonnage of 16,725,062 tons passing through all the ports in South Australia, the balance being handled by the privately owned wharves.

**Department of Marine and Harbors<sup>(a)</sup>**  
**Indebtedness, Revenue and Expenditure**

Year	Loan Fund Indebtedness	Revenue	Expenditure from Revenue			Surplus
			Working Expenses	Interest	Total	
			\$'000			
1963-64 .....	40,030	6,114	3,591	1,581	5,172	942
1964-65 .....	41,393	6,201	3,908	1,679	5,586	614
1965-66 .....	43,172	6,194	3,941	1,734	5,675	519
1966-67 .....	44,264	6,734	4,019	1,807	5,827	907
1967-68 .....	45,478	6,418	4,196	1,869	6,066	352

(a) South Australian Harbors Board prior to 20 March 1967.

### HISTORICAL

For a detailed description of development in the nineteenth century see pages 270-1 of the *South Australian Year Book* 1966.

### Development in the Twentieth Century

As shipping increased through increased trade, many outport jetties were strengthened or replaced by better structures; in some cases new jetties were built nearby and the old jetties remained for fishermen. As the size and draught of vessels increased jetties were lengthened into deeper waters. Many new jetties were erected in the early part of the century, e.g. Murat Bay, Smoky Bay and Thevenard on the West Coast. Since 1930, most of the old wooden wharves at Port Adelaide have been replaced by concrete and steel structures complete with modern cargo sheds and storage areas. Since 1938 all the

old wharves at Port Pirie have been replaced with steel sheetpiling walls and the berths and river channel deepened. In the 1920s coal handling facilities were installed at Osborne, Port Adelaide, and later extended for the bulk handling of phosphate rock and other loose materials.

Deepening or clearing of channels and deepening of berths was carried out by dredging over the years to keep most harbours open to shipping and to be able to accommodate increasingly larger vessels. The opening of the Birkenhead Bridge in 1940 marked a further stage of development at Port Adelaide. Coastal shipping flourished in the pre-war period with regular services to the Gulf ports, West Coast and Kangaroo Island. Ketch traffic went to the main ports, carrying grain from the smaller outports for loading oversides into interstate or overseas vessels.

A change in the pattern of intrastate shipping has occurred with the erection of bulk handling facilities for grain at major ports in recent years. These facilities are now available at Port Adelaide, Port Pirie, Wallaroo, Port Lincoln and Thevenard and wheat and barley are being loaded at Ardrossan under agreement with the private owner. Grain is being carted overland to silos and loaded aboard overseas vessels by means of conveyors, so eliminating ketch trade from the smaller ports.

With no alternative means of transport and new soldier settlements in the 1950s, shipping trade to and from Kangaroo Island has increased. At the port of Kingscote the existing jetty has been widened and lengthened since May 1955. Additional harbour facilities were made with the provision of a trailership berth for the roll-on roll-off vessel *m.v. Troubridge* which went into service in November 1961. Trailership berths were also built at Port Adelaide and Port Lincoln.

In 1950 the Harbours Board Commissioners reported that the majority of the numerous ports established over the years along the coastline of South Australia and along the River Murray were operated at a loss. When these outport jetties and wharves were constructed, sea or river transport was practically the only means available to the settler on the land. However, the advent of motor transport and improved roads, and in some cases a preference for railways, meant that much of the water-borne trade had been diverted. Many of the numerous outports which once served the outback trade of the State were not used at all, while others were used for cargoes which could not be conveniently or more cheaply handled by other transport.

At one time it was thought that shipping along the River Murray would play an important role in South Australia's commercial transport system. However, the development of railway systems in New South Wales, Victoria and South Australia and the erection of the first bridge at Murray Bridge in 1879 took the trade away from the river steamers and the commercial use of South Australian river ports quickly declined. By the time of Federation in 1901 the importance of the Murray as a medium of commercial transportation had largely ceased.

Of more recent origin, is the decline in the use of some outports due to the introduction of silos at railway sites and major ports and the erection of bulk handling facilities for grain as mentioned earlier.

#### FUTURE DEVELOPMENT

The competition from intrastate road and rail transport has affected the larger ports as well, so that very little general cargo is carried between ports in this State. To decrease the delay in the turn-round of vessels (especially overseas and interstate vessels) port facilities in the major harbours have been improved

or are to be improved, *e.g.* reconstruction of wharves and deepening of berths and channels, installation of overhead cranes, increased storage sheds, etc.

The Greater Port Adelaide Plan, details of which were released in 1949, included proposals for twenty projects for port development over the ensuing 50 years. Among those projects were:

- (1) The improvement and extension of wharves and allied cargo facilities.
- (2) The deepening, and widening of the shipping channels and provision of larger swinging basins.
- (3) The reclamation and development of low-lying land adjacent to the port for the creation of industrial, commercial and dock estates.

Some of these projects have been completed while others are still in progress. In April 1964 approval was given for a start on a scheme to widen and deepen the Port River at a cost of \$6.6 million. Currently under this plan, the Port River is being deepened to 30ft at Low Water, widened to a minimum width of 500ft and a swinging basin of 1,050ft diameter is being provided. The material dredged in this operation is being used to reclaim part of the 2,000 acres of low-lying land intended to be used for industrial and commercial sites and for port extensions.

The advent of containerised cargo will affect only Port Adelaide as other ports in the State do not handle a sufficient quantity of cargo that is suitable for large containers. Although Port Adelaide has not yet been selected as a terminal port by any of the container ship operators, planning is proceeding on the assumption that it will fulfil such a role in the future. As a result 245 acres of land are being reclaimed at Pelican Point near the Outer Harbor where it will be possible to provide up to 3,000ft of berth length with a depth of 40ft Low Water if necessary. During 1967-68, twenty acres of land were reclaimed at Pelican Point, bringing the total reclaimed in this locality to approximately forty acres.

Two container depots, under construction by private enterprise in the dock industrial estate half a mile from the waterfront, will offer acceptance, forwarding, packing and unpacking facilities for international and interstate containers and other unit loads. Preparations are also being made for the establishment of a high density wool dumping centre adjacent to these depots for shipping wool in containers.

In March 1968 the Parliamentary Standing Committee on Public Works recommended construction of an interstate roll-on roll-off terminal in No. 3 Dock at Port Adelaide and at April 1969 work on this project was about 50 per cent completed. In addition, about ten acres of floodlit paving have been provided for the open storage of containers. The current work of deepening and widening the Port River will also assist the development of container traffic by enabling larger vessels to use the port.

### TIDES AND WATER DEPTH

Tides—the daily ebb and flow of the waters of the ocean—are due to gravitational effect of the sun and moon. Spring and neap tides are associated with phases of the moon, *i.e.* spring tides with the new moon and full moon, and neap tides with the first quarter and last quarter of the moon.

All around the Australian coast there is a well-marked 'diurnal inequality'; that is, the forenoon and afternoon tides may differ considerably in height. The mean tide rises in the following table are shown as higher high water



and lower high water, rather than high water springs and neaps. This method of measuring tides which have this 'diurnal inequality' is found in nearly all South Australian ports.

### Tides and Water Depths, South Australian Ports, 1 January 1969

Port	Maximum Depth below Low Water Datum (a)	Tides			
		At	Mean Rise		
			Higher High Water	Lower High Water	
	Ft In		Ft In	Ft In	
Outer Harbor:					
Channel .....	33 0	Wharf	7 11	6 5	
Wharf .....	35 0				
Port Adelaide:					
Channel .....	27 0	Wharf	8 0	6 6	
Wharf .....	35 0				
Ardrossan:					
Channel .....	(b)	Jetty	8 10	7 0	
Jetty—B.H.P. ....	27 0				
Port Augusta:					
Channel .....	16 0	Wharf	9 2	7 4	
Wharves .....	20 0				
Port Lincoln:					
Channel .....	(c)	Jetty	4 11	3 6	
Wharf (Bulk Loading) .....	32 0				
Port Pirie:					
Channel .....	21 0	Wharf	8 4	5 11	
Wharves .....	27 0				
Port Stanvac:					
Channel .....	(b)	Wharf	6 1	4 7	
Wharf .....	35 0				
Proper Bay (B.H.P.):					
Channel .....	30 0	Jetty	4 11	3 6	
Wharf .....	34 0				
Thevenard:					
Channel .....	23 9	Jetty	5 0	3 7	
Wharf .....	27 0				
Wallaroo:					
Channel .....	27 9	Jetty	4 10	2 11	
Wharf .....	31 0				
Whyalla (B.H.P.):					
Inner harbour;					
Channel .....	25 0	Jetty and	8 1	6 0	
Wharf .....	30 0	Wharf			
Outer harbour;					
Channel—ore jetty (No.2) approach .....	34 0	Jetty and	8 1	6 0	
Ore jetty (No. 2) .....	36 0	Wharf			

(a) The depth shown against wharves is the greatest at present available and may be found at one berth only at the wharf or jetty concerned.

(b) No approach channel. (c) Deep water gradually shoaling to depth at wharf.

### AERODROMES

There were 670 civil aerodromes in Australia and Papua-New Guinea at 30 June 1968 including 119 owned and operated by the Commonwealth Government and 551 licensed aerodromes owned and operated by local authorities or private interests. In addition there are some hundreds of

authorised landing grounds which are fields prepared for the operation of aircraft but not open to public use. These fields meet Civil Aviation Department specifications less exacting than those used in the development of government owned or licensed aerodromes.

In South Australia at 30 June 1968 there were ten government and seventeen licensed aerodromes as set out below:

*Government owned*

Adelaide  
Ceduna  
Cleve  
Kingscote  
Leigh Creek  
Mount Gambier  
Oodnadatta  
Parafield  
Port Lincoln  
Whyalla

*Licensed*

Cordillo Downs  
Cowell  
De Rose Hill  
Ernabella Mission  
Gidgealpa  
Innamincka  
Kimba  
Millicent  
Minnipa  
Moomba  
Mount Dare  
Musgrave Park  
Naracoorte  
Port Pirie  
Renmark  
Tieyon  
Tintinara

During 1967-68 the aerodrome at Cowell was transferred to the control of the District Council of Franklin Harbor.

About half of the licensed aerodromes are on stations, missions, etc. in the northern part of the State. In addition to the civil aerodromes there are two major aerodromes, one at Woomera controlled by the Department of Supply through the Weapons Research Establishment and the other at Salisbury (Edinburgh Airfield), which are used by aircraft associated with trials operations, and by civil charter aircraft carrying passengers and freight. Edinburgh Airfield, the control of which was transferred from the Department of Supply to the Department of Air in February 1968, became the base for an RAAF maritime squadron during 1968.

The main air terminal in South Australia is the Adelaide Airport at West Beach, and although not an international airport, it can be used by international aircraft when required. It is on the scheduled flights of interstate services from Sydney, Melbourne, Perth and Darwin and is the terminus of intrastate services. As part of the Civil Aviation Department's aerodrome development programme to provide improved airport facilities for new types of aircraft, construction was commenced at West Beach in 1947 and the aerodrome was opened to commercial aircraft in February 1955. The primary runway is 6,850 feet long by 200 feet wide and the secondary runway measures 5,420 feet by 150 feet. In addition to radio navigational aid systems and equipment there are modern hangars and a terminal building. The terminal building, opened in 1957 at a cost of approximately \$600,000, has a passenger lounge, baggage handling facilities, observation decks and incorporates the Department's airways operations centre

and airport control tower. A \$1.5 million airport expansion programme is currently proceeding; this project includes the extension of the primary runway by 1,150 feet to a total length of 8,000 feet, extension of the associated taxiway and main apron areas and expansion of the passenger terminal which, with the growth of air traffic, has proved inadequate at peak periods. This latter project is expected to be completed early in 1970.

With the increased use of jet aircraft on domestic routes, Australian designed visual approach slope guidance systems were installed at Adelaide Airport in 1966-67. Night landing facilities were introduced at Kingscote, on Kangaroo Island, during 1966-67 and at Parafield during 1967-68.

Since the opening of the Adelaide Airport, the aerodrome at Parafield, about eleven miles north of Adelaide, has been restricted principally to use by light aircraft as operated by air taxi and crop dusting companies, private planes used for business or pleasure, and aircraft belonging to the Royal Aero Club of South Australia whose headquarters remained at Parafield.

Other aerodromes are situated near the larger towns, *e.g.* Mount Gambier, Whyalla, Port Pirie and Port Lincoln and in all cases these aerodromes have replaced the landing fields used by the smaller planes of the first airline companies.

A significant development during 1966-67 was the Commonwealth Government's approval for the introduction of commuter services in country areas. These are not airline services but regular flights by charter firms with small single and twin-engined aircraft operating to fixed and published time tables. They are intended to provide regular air links between many centres, towns and country areas which are either not served by the major airlines or have no direct air service with their capital or nearest major provincial city. The first commuter service for flights between Adelaide and the South Australian opal fields at Coober Pedy commenced during 1966-67, and in 1967-68 a daily service commenced between Port Augusta, Port Pirie and Adelaide.

### Control of Aerodromes

At a conference of Commonwealth Ministers and State Premiers in May 1920, it was agreed that the Commonwealth should introduce a Bill to give effect to the Convention for the Regulation of Air Navigation signed in Paris on 13 October 1919. The *Air Navigation Act* 1920, under which a Controller of Civil Aviation was appointed as head of the Civil Aviation Branch which came under the jurisdiction of the Department of Defence, had three main objects:

- (1) Generally to regulate civil aviation activities in Australia.
- (2) To carry out the provisions of the Convention on Air Navigation signed in Paris.
- (3) To apply the principles of the Convention to domestic as well as international flying operations.

Regulations were drawn up under this Act to provide, *inter alia*, for the registration and periodical inspection of aircraft, licensing of aerodromes, examination and licensing of personnel engaged in flying and in upkeep of machines, control of aircraft movements, rules of the air, etc.

The South Australian Parliament passed the Commonwealth Powers (Air Navigation) Act, 1921 wherein it referred to the Commonwealth powers to make regulations in connection with international and interstate air navigation. The *Air Navigation Act*, 1937 provided for the application of the Commonwealth

Air Navigation Regulations to and in relation to air navigation within the State of South Australia and repealed the earlier Act.

The Commonwealth civil aviation legislation at present includes the *Air Navigation Act* 1920-1966, the *Australian National Airlines Act* 1945-1961 and several other Acts, whilst the State legislation in South Australia includes the 1937 Act and the Civil Aviation (Carriers' Liability) Act, 1962.

Since 1939 Civil Aviation Administration has been a separate department under the Minister for Civil Aviation.

### Historical

A description of early aerodromes in South Australia and recent developments was included on page 277 of the *South Australian Year Book* 1966.

### FIRST FLIGHT FROM ENGLAND TO AUSTRALIA

The year 1969 is the fiftieth anniversary of the first flight from England to Australia. In 1919 the Australian Commonwealth Government offered a prize of \$20,000 for the first aircraft manned by Australians to fly from England to Australia in thirty days or less.

Captain G. C. Matthews and Sergeant T. Kay in a Sopwith *Wallaby* left England on 21 October 1919, but abandoned the flight after crashing in Bali.

Captain Ross Smith accompanied by his brother Lieutenant Keith Smith as navigator and Sergeants J. M. Bennett and W. H. Shiers as mechanics began the journey in a twin-engined Vickers *Vimy* aircraft on 12 November and arrived in Darwin on 10 December 1919.

Lieutenants Douglas and Ross left Hounslow in an Alliance aircraft on 13 November 1919 but crashed in Surrey and were killed.

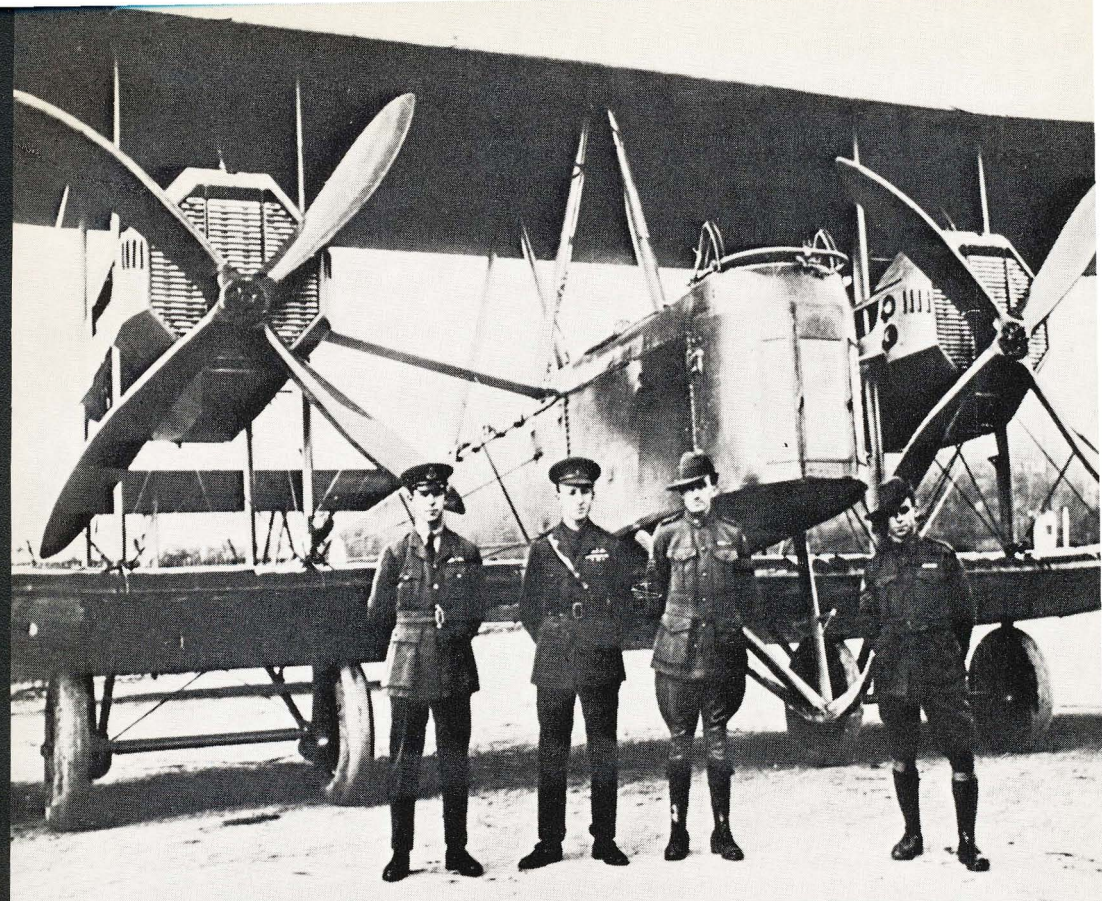
Lieutenants Wilkins, Williams, Potts and Rendle in a Blackburn *Kangaroo* left Hounslow on 21 November 1919, but crashed at Suda Bay, Crete and the flight was abandoned.

Captain Howell and Corporal Frazer who left England on 4 December 1919 in a Martinsyde crashed in the sea off Corfu near the coast of Greece and were killed.

Lieutenants Parer and McIntosh had originally entered the race in a De Havilland 9 but withdrew as they were still in England when Ross Smith and his group arrived in Australia. They decided to continue with their flight, and leaving Hounslow on 9 January 1920 reached Darwin on 2 August 1920.

A Frenchman, E. Poulet, who was not competing in the race had started from Paris in an attempt to be the first man to fly to Australia from Europe. He was overtaken by Ross and Keith Smith in Burma and did not reach Australia.

The route taken by Ross and Keith Smith on their successful flight can be divided into four stages; London to Cairo, Cairo to Calcutta, Calcutta to Singapore and Singapore to Darwin. It followed land masses as far as possible, only the last section having a long period of flying without sight of land. Ross Smith had previously flown over most of the route and his main concern in the first stage was the probability of bad weather. As far as Calcutta adequate aerodromes existed and Royal Air Force assistance was available at most landing places but from Calcutta onwards the group had to make their own arrangements. The last two stages were the most hazardous, as landing fields were few and much of the land was dense jungle. Those landing places available were very small for a machine the size of the *Vimy*. Wherever possible



*South Australian Archives*

Vickers *Vimy* and crew, from left Lieutenant Keith Smith, Captain Ross Smith, Sergeant Bennett and Sergeant Shiers.

The Vickers *Vimy* after it had landed at Adelaide at the end of March 1920.

*The late Clem W. Potter*







*S.A. Govt. Tourist Bureau*  
This public memorial situated in Creswell Garden near the Adelaide Oval was unveiled in 1927.

Portion of the memorial building, at the Adelaide Airport, which now houses the Vickers Vimy. This memorial was unveiled in 1955.

*S.A. Govt. Tourist Bureau*



the course was flown by maps and direct observation of ground features, but when cloud or misty weather made this impossible reliance was solely on navigation using a compass and ground-speed and drift indicators.

The group left Hounslow airfield in London on 12 November 1919 and reached Darwin on 10 December 1919, twenty-seven days and twenty hours after leaving Hounslow; the actual flying time was 135 hours and the distance covered over 11,000 miles. After the 135 hours flying time the engines of the *Vimy* were due for an overhaul and a split in one of the propellers (caused in a collision with a hawk when taking off from Calcutta) was causing concern. It was decided to push on to Sydney but engine trouble and the badly split propeller caused delays, and an engine overhaul was necessary at Charleville in Queensland.

Sydney was eventually reached on 14 February and Melbourne on 25 February 1920 where the prize of \$20,000 was presented and divided equally among the crew. On 23 March the final flight of 430 miles was made from Melbourne to Adelaide in 7 hours 30 minutes. In all, the *Vimy* had flown 14,350 miles in 188 hours 20 minutes flying time at an average speed of 76.3 mph; thirty-seven stops were made on the way, the longest hop was 730 miles and the shortest 20 miles.

In recognition of their feat Ross and Keith Smith were knighted, and Bennett and Shiers were each promoted to the rank of lieutenant and awarded the Air Force Medal.

The Vickers *Vimy* was presented to the Commonwealth Government and was exhibited for some years in the Australian War Memorial, Canberra. It is now housed in a Memorial building at Adelaide Airport.

## 8.6 ELECTRICITY AND GAS

### ELECTRICITY

The period prior to 1946 saw the development of generating capacity by private enterprise and local authorities, with a dominant private company setting the pace from the turn of the century. It was also a period of almost complete dependence on imported fuels. By contrast the post-war era has been one of extremely rapid development under a semi-government authority and has seen the rapid exploitation of local fuel supplies.

On 1 September 1946, as a consequence of recommendations of a royal commission of inquiry, the assets of the Adelaide Electric Supply Co. were acquired and vested in the Electricity Trust of South Australia, which then became responsible for co-ordinating and investigating the supply of electricity to all parts of the State.

A more detailed description of the development of electricity supply was included on pages 278-81 of the *South Australian Year Book* 1966.

#### Power Generation

In 1946 the Electricity Trust inherited at the Osborne power station the 'A' section, which had a generating capacity of 79,000 kilowatts, and the first installations of 'B' section, which began operating in 1947. At 30 June 1968 the generating capacity at Osborne (excluding emergency generating plants) was 300,000 kilowatts.

A major decision by the Trust was the construction of the Thomas Playford Power Station at Port Augusta, designed to burn Leigh Creek coal exclusively. The 'A' section was completed in 1954 while the 'B' section was completed in 1964 to give a combined total generating capacity of 330,000 kilowatts.

Following the passing of the Electricity Trust of South Australia (Torrens Island Power Station) Act in 1962, work was commenced on the construction of stage one of a power station on Torrens Island, near Port Adelaide. The first stage required the installation of two 120,000 kilowatt turbo-generators. The first of these generators commenced operation in the winter of 1967 and the second during the winter of 1968. The second stage has been commenced and will comprise two 120,000 kilowatt generating units which are scheduled to be commissioned in 1969 and 1971 respectively.

The rapid growth of generating plant operated by the Electricity Trust of South Australia and the decline of plant operated by other producers since 1946 can be seen from the following table.

**Electricity Generation, South Australia**  
**Installed Capacity of Generating Plant in Power Stations at 30 June <sup>(a)</sup>**

Power Stations	1946	1952	1958	1961	1964	1967	1968
KILOWATTS							
Electricity Trust:							
Osborne .....	82,000	172,000	264,000	264,000	264,000	314,025	314,025
Port Augusta .....	—	—	92,500	212,500	332,700	332,700	332,700
Torrens Island .....	—	—	—	—	—	120,200	120,200
Mount Gambier .....	—	—	14,200	19,200	22,230	22,230	22,230
Port Lincoln .....	—	—	5,000	6,933	6,890	9,600	9,600
Other .....	—	4,700	—	—	—	—	—
Total E.T.S.A. ....	82,000	176,700	375,700	502,633	625,820	798,755	798,755
Other government authorities ..	205	205	731	4,741	3,372	3,803	3,803
Local authorities .....	33,401	34,808	(b) 5,067	4,675	6,561	4,404	3,915
Private .....	29,855	28,162	18,600	33,537	33,109	4,818	4,247
Total .....	145,461	239,875	400,098	545,586	668,862	811,780	810,720

(a) Includes house plants used for emergency generation.

(b) Municipal Tramways Trust ceased generating in 1956.

At 30 June 1968 steam generating plants represented 99 per cent of total capacity, the remainder being internal combustion plants.

### Fuels

The following table shows the quantities of various fuels consumed by the Electricity Trust in selected years since 1946 and illustrates the considerable movement in their relative importance.

**Electricity Trust of S.A., Fuels Consumed in Steam Power Stations**

Year	N.S.W. Coal	Leigh Creek Coal	Oil	Wood	Coke
Tons					
1945-46 (a) .....	190,889	15,101	—	—	—
1957-58 .....	328,214	668,128	47,019	61,032	14,268
1960-61 .....	185,043	938,532	98,216	110,304	12,627
1963-64 .....	72,253	1,566,986	110,165	166,735	1,818
1966-67 .....	50,241	2,089,916	228,999	184,722	—
1967-68 .....	53,890	2,078,280	311,769	187,908	—

(a) Consumed by Adelaide Electric Supply Co.



The construction of refineries in Australia has resulted in residual oil being available at a price competitive with coal and increasing quantities of oil are being consumed in power generation. The majority of the boilers at Osborne and the boilers at Torrens Island are oil burning.

However, Leigh Creek coal is currently a more economical fuel than imported coal or oil, and where possible power for the central network is generated at Port Augusta with the Osborne station being used primarily to meet peak loads.

The discovery of natural gas in the north-east of the State in commercial quantities and the decision by the State Government to construct a pipe-line from the gas fields to Adelaide will provide another local source of fuel for the future. In planning the Torrens Island Power Station the Electricity Trust has made provisions in the design of the boilers for conversion to use natural gas. This would provide one method of distribution of the energy from natural gas as electricity is distributed to all of the main settled areas.

Wood has also been used since the construction of the Mount Gambier and Nangwarry power stations. Its future as a fuel is, however, uncertain and depends on alternative uses of waste wood, particularly in the pulp industry.

### Transmission and Distribution

The Electricity Trust was specifically charged with the responsibility of expanding its services into country areas. In the immediate post-war years shortages of materials somewhat handicapped the rate of extension; however, a vigorous expansion of services in general has taken place as is illustrated in the following table.

#### Electricity Trust of S.A., Transmission Lines

At 30 June

Rated Voltage	1946	1952	1958	1961	1964	1967	1968
ROUTE MILES							
275,000 volt .....	—	—	—	370	370	370	396
132,000 volt .....	—	177	642	642	1,043	1,249	1,293
66,000 volt .....	105	222	335	375	430	466	476
33,000 volt .....	477	631	1,131	1,344	1,774	2,119	2,112
19,000 volt (SWER) (a) .....	—	—	26	1,877	5,065	8,445	9,083
11,000 and 7,600 volt .....	564	1,041	2,537	3,303	4,627	5,607	5,881
Total mileage .....	1,146	2,071	4,671	7,911	13,309	18,256	19,241

(a) Single wire earth return system.

Electric power is transmitted over considerable distances at very high voltages and is stepped down at sub-stations and distribution centres.

The most important transmission lines are those connecting the major production centre, Port Augusta, with the metropolitan area. The initial link between these centres was made with two 132,000 volt lines. These lines follow similar routes to Bungama, near Port Pirie, where a sub-station serves the mid-north area. From Bungama the lines diverge, one passing through South Hummocks where a major sub-station supplies Yorke Peninsula, and the other running *via* Waterloo where a sub-station serves the Upper Murray.

Further lines linking Port Augusta and Adelaide were brought into use in 1960 and 1961. These lines of 275,000 volts are not tapped at intermediate points.

Major transmission lines also extend from the central network to Woomera (Commonwealth line), Berri (completed 1954-55), Leigh Creek (1961-62), Mount Gambier (1962-63), Whyalla (1963-64) and Port Lincoln (1966-67). Consumers on Kangaroo Island are supplied by a 33,000 volt submarine cable across Backstairs Passage. A second circuit 132,000 volt line from Playford Power Station to Whyalla was completed in the latter half of 1967 and a 132,000 volt line from Waterloo to North West Bend (near Morgan) together with the Magill-Cherry Gardens-Happy Valley 275,000 volt line are due for completion by the end of 1969.

In recent years extensive use of the single wire earth return system (see table above) has resulted in the supplying of electricity to areas where consumers are so scattered that supply by conventional methods would have been impracticable.

### Electricity Trust of S.A., Number of Consumers

At 30 June

Consumers	1946 (a)	1952	1958	1961	1964	1967	1968
Residential .....		143,040	203,321	239,446	277,399	321,731	330,477
General Purpose .....		19,664	28,275	32,615	35,477	38,950	39,944
Industrial .....	Not available	2,851	6,665	10,670	15,579	19,956	21,063
Bulk and traction .....		7	15	15	10	7	8
Total .....	118,262	165,562	238,276	282,746	328,465	380,644	391,492

(a) At 31 August.

### GAS

Gas was generated at three major works in South Australia during 1968; two in the metropolitan area and one at Port Pirie. Smaller works at Whyalla, Pimpala and Christies Beach distribute gas to the adjoining areas, using liquefied petroleum gas as feedstock. All production for the Adelaide metropolitan area and Port Pirie was by the South Australian Gas Company, a privately owned company regulated by State legislation. Until recently gas had also been produced at Mount Gambier, and prior to the 1914-18 War gas works were operated at Gawler, Kapunda and Strathalbyn.

The South Australian Gas Company was incorporated by Act of Parliament in 1861 to supply gas to Adelaide and surrounding villages. The first gas was produced at Brompton in 1863 and subsequent plants were opened at Port Adelaide in 1866 and Glenelg in 1875.

An Act authorising a second company, the Provincial Gas Company, was assented to in 1869. This company established a metropolitan works at Thebarton in 1871 and country works were opened at Gawler, Kapunda and Strathalbyn. In 1878 this undertaking was absorbed by the South Australian Gas Company and manufacturing at the Thebarton plant ceased. The country works were kept in operation until 1917. Gas was first produced at Port Pirie in 1892.

Following the development of high pressure distribution facilities the South Australian Gas Company was able to centralise its metropolitan production at Brompton with the Port Adelaide and Glenelg plants ceasing production in 1922 and 1923. These plants together with the earlier Thebarton works were retained as holder stations. In 1928 a new gas works was opened adjacent to the Port River at Osborne. The Osborne works were closed for several years during the 1930s depression.

Since the 1939-45 War a considerable expansion of manufacturing capacity and distribution facilities has taken place.

### South Australian Gas Co., Capital, Consumers, and Mains

At 30 June

Particulars	1940	1950	1960	1968
Capital employed (\$m) .....	5.4	6.0	19.4	37.1
Number of consumers (a) .....	61,207	84,629	121,720	177,544
Miles of mains .....	904	1,042	1,569	2,087

(a) Includes consumers of bottled gas.

Details of the present day capacity of plant by the type of gas produced are given in the following table.

### South Australian Gas Co., Plant Capacity

At 30 June 1968

Location	Coal Gas	Carburetted Water Gas	Reformed Gas (a)	Liquefied Petroleum Gas (b)	Total
	'000 Cubic Feet per Day				
Brompton .....	—	4,000	20,000	—	24,000
Osborne .....	6,500	750	—	1,500	8,750
Port Pirie .....	—	250	500	—	750
Total .....	6,500	5,000	20,500	1,500	33,500

(a) Using refinery gas and light virgin naphtha as feedstock.

(b) Mixed with other gases for distribution through the mains network.

The manufacture of gas by the carbonisation of black coal imported from New South Wales was the conventional method of production until the end of the 1939-45 War. Under this process large quantities of coke and tar are produced as by-products but a declining market for these residuals together with the development of alternative production methods has resulted in less emphasis in recent years on this method of production.

In 1948 and 1950 the company installed plant at Osborne and Brompton for the manufacture of carburetted water gas from oil distillate and coke. This plant was introduced to help meet peak winter loads and can be brought into production much more rapidly than carbonising retorts.

Liquefied petroleum gas has been available in South Australia since 1957. This gas is largely distributed in portable cylinders although a small quantity is converted for mains distribution when refinery gas is not available.

Refinery gas from the Port Stanvac oil refinery is piped to the Brompton works where two reforming plants convert it to towns gas and another two reforming plants have been installed to use light virgin naphtha as the initial feedstock. When current plant modifications are complete all four plants will be capable of reforming either refinery gas, light virgin naphtha or natural gas when this becomes available. A similar plant is in use at Port Pirie for the reforming of light virgin naphtha.

Following the discoveries of natural gas at Gidgealpa and the establishment of the Natural Gas Pipelines Authority the South Australian Gas Company has entered into a twenty year contract with the producers for the supply of natural gas, and consumers' appliances will eventually be converted to use this new fuel.

Gas from the various works is reticulated through most of the metropolitan area and Port Pirie. In addition liquefied petroleum gas is distributed by reticulation at Mount Gambier by the Mount Gambier Gas Company Ltd, at Christies Beach, Reynella, Pimpala and Whyalla by the South Australian Gas Company, and is available elsewhere as bottled gas.

An inter-connected system of high pressure mains traverses the metropolitan area from the Brompton and Osborne works and mains extend south to Flagstaff Hill, north-east to Tea Tree Gully and north to Elizabeth. The Elizabeth main was first laid for industrial use but now serves over 6,000 domestic consumers including 2,000 in the Elizabeth area. The pressure in these mains is reduced by means of district governors for distribution to consumers.

At 31 December 1968 the company was maintaining 2,087 miles of mains from its metropolitan works and supplying 178,000 consumers. Nearly 80 per cent of the gas supplied was used in domestic dwellings. The Port Pirie system involved 50 miles of mains.

Variations during the day in the demand for gas necessitates the storage of considerable quantities and gas holders with a combined capacity of 10 million cubic feet are situated in a number of suburbs. At Port Pirie facilities exist for the storage of 340,000 cubic feet of gas.

## 8.7 HOUSING AND BUILDING

### HOUSING

Features of housing development in South Australia have been the high proportion of stone houses built in earlier years, and of brick houses in more recent years. The familiar old-style stone houses are still to be seen in most settled parts of the State, especially in rural areas. The 1947 Census was in fact the first at which houses with outer walls of brick outnumbered those with walls of stone.

The building materials used have largely been determined by the availability of building stone and deposits of clay suitable for brickmaking, and by the relative lack of natural timbers suitable for houses. Recently brick veneer homes have become more popular, particularly in the metropolitan area, but this is partly due to the poor building soil in some of the metropolitan and near-metropolitan areas.

## DWELLINGS: CENSUS DATA

Information on housing is obtained mainly from particulars of dwellings collected at each census. For the purpose of the Census a 'dwelling' is any habitation occupied by a household group living together as a domestic unit, whether comprising the whole or only part of a building. The term 'dwelling' includes houses and flats, and in addition habitations ranging from a single-roomed shack to a multi-roomed hotel or institution.

Dwellings have been classified as 'private' or 'non-private'. Private dwellings include private houses, shares of private houses, self-contained flats, shares of self-contained flats, rooms, apartments, sheds and huts; non-private dwellings include hotels, motels, boarding houses, lodging houses and hostels, educational, religious, and charitable institutions, hospitals, and defence and penal establishments.

Dwelling counts from the last six Censuses are shown in the next table; figures exclude dwellings occupied solely by full-blood Aborigines.

Dwellings in South Australia, Censuses 1921 to 1966

Census	Occupied			Unoccupied (a)	Total Dwellings
	Private	Non-private	Total		
1921.....	104,295	3,619	107,914	4,431	112,345
1933.....	136,611	2,663	139,274	5,353	144,627
1947.....	166,118	2,420	168,538	3,547	172,085
1954.....	212,095	3,206	215,301	8,524	223,825
1961.....	259,344	2,564	261,908	17,061	278,969
1966.....	299,630	2,684	302,314	25,110	327,424

(a) See page 347 "Unoccupied Dwellings".

Total dwellings almost trebled in the forty-five years to 1966, with the greatest increase (about 155,000 out of a total of 215,000) occurring subsequent to the 1947 Census.

In most of the tables which follow, details of dwellings at the 1966 Census are given by geographical distribution. New criteria were adopted at the 1966 Census for the delimitation of urban centres, a full description of which is contained in part 5.2 pages 100-3. The relevant tables show totals for each section of the State only, namely:

- (a) Metropolitan—This area is the 'urban centre' of Adelaide (see map page 102).
- (b) Other Urban—Includes all urban centres other than Adelaide Metropolitan Area.
- (c) Rural—Includes all areas not included in (a) or (b) above.

**Occupied Dwellings**

The next table gives details of occupied dwellings only, according to the type of dwelling. Private dwellings were classified into the following six categories:

*Private House*—houses (including semi-detached and terrace houses) used for dwelling purposes by a household group.

*Share of a Private House*—a portion of a private house which is shared without structural subdivision by two or more household groups.

*Self-contained Flat*—a part of a house or other building which can be completely closed off and which has its own cooking and bathing facilities (includes home-units).

*Share of a Self-contained Flat*—a portion of a self-contained flat which is shared without structural subdivision by two or more household groups.

*Shed, Hut, Tent, etc.*—sheds, huts, caravans, tents, boats, etc. occupied by a household group.

*Other Private Dwellings*—includes private dwellings such as rooms, apartments, flats, etc. which are parts of buildings but not self-contained units.

**Occupied Dwellings by Class, South Australia, Censuses 1961 and 1966**

Class of Dwelling	30 June 1961	30 June 1966			
	Total	Urban		Rural	Total
		Metropolitan	Other		
<b>Private dwellings:</b>					
Private house .....	231,640	180,416	43,779	46,850	271,045
Share of private house .....	8,534	1,899	102	139	2,140
Self-contained flat .....	14,094	18,451	1,697	654	20,802
Share of self-contained flat .....	(a)	59	2	—	61
Shed, hut, tent, etc. ....	2,887	227	432	1,279	1,938
Other private dwellings .....	2,189	3,176	299	169	3,644
<b>Total private dwellings .....</b>	<b>259,344</b>	<b>204,228</b>	<b>46,311</b>	<b>49,091</b>	<b>299,630</b>
<b>Non-private dwellings:</b>					
Licensed hotel .....	577	230	149	214	593
Motel .....	24	24	35	15	74
Boarding house .....	1,142	593	225	74	892
Educational institution .....	50	28	5	3	36
Religious institution .....	79	46	25	9	80
Charitable institution .....	44	44	4	4	52
Hospital .....	180	111	40	40	191
Other non-private dwellings .....	468	153	132	481	766
<b>Total non-private dwellings .....</b>	<b>2,564</b>	<b>1,229</b>	<b>615</b>	<b>840</b>	<b>2,684</b>
<b>Total occupied dwellings ..</b>	<b>261,908</b>	<b>205,457</b>	<b>46,926</b>	<b>49,931</b>	<b>302,314</b>

(a) At the 1961 Census share of self-contained flat was not separately identified.

During the five year intercensal period, the number of houses increased by approximately 17 per cent while the number of flats increased by approximately 48 per cent. Share of private houses and sheds, huts, tents, etc. used as private dwellings decreased. The number of flats in 1966 (20,802) is almost four times the figure of 5,674 at 30 June 1954.

The following table shows the number of persons enumerated in each class of dwelling at the last two censuses.

**Number of Inmates by Class of Dwelling, South Australia,  
Censuses 1961 and 1966**

Particulars	30 June 1961		30 June 1966		
	Total	Urban		Rural	Total
		Metropolitan	Other		
<b>Persons enumerated:</b>					
<b>In private dwellings:</b>					
Private house .....	848,793	647,017	157,806	176,010	980,833
Share of private house .....	22,758	4,776	271	451	5,498
Self-contained flat .....	34,894	38,696	4,516	2,049	45,261
Share of self-contained flat .....	(a)	125	3	—	128
Shed, hut, tent, etc. ....	7,974	487	1,068	2,789	4,344
Other private dwellings .....	4,354	5,664	634	400	6,698
<b>Total private dwellings .....</b>	<b>918,773</b>	<b>696,765</b>	<b>164,298</b>	<b>181,699</b>	<b>1,042,762</b>
<b>In non-private dwellings .....</b>	<b>45,834</b>	<b>30,982</b>	<b>9,268</b>	<b>6,561</b>	<b>46,811</b>
<b>Total occupied dwellings ..</b>	<b>964,607</b>	<b>727,747</b>	<b>173,566</b>	<b>188,260</b>	<b>1,089,573</b>
<b>Persons not enumerated in dwellings:</b>					
Campers-out .....	795	169	230	330	729
Migratory .....	3,938	..	..	..	1,573
<b>Total population .....</b>	<b>969,340</b>	<b>727,916</b>	<b>173,796</b>	<b>188,590</b>	<b>1,091,875</b>

(a) See note (a) previous table.  
.. not applicable.

The percentage of persons enumerated in private dwellings was 94.8 at the 1961 Census, and by 1966 this percentage had increased slightly to 95.5. The percentage of persons enumerated in non-private dwellings decreased from 4.7 to 4.3 while the percentage not enumerated in dwellings also decreased (from 0.5 to 0.2) over the same period.

### Occupied Private Dwellings

There were 259,344 occupied private dwellings at 30 June 1961, and by 30 June 1966 this number had increased by 15.5 per cent to 299,630.

Characteristics of these dwellings are shown in the tables which follow.

**Occupied Private Dwellings by Number of Rooms, South Australia,  
Censuses 1961 and 1966**

Number of Rooms per Dwelling	30 June 1961			30 June 1966		
	Private House	Self-contained Flat	Total (including other)	Private House	Self-contained Flat	Total (including other)
1.....	79	94	2,278	144	301	2,520
2.....	1,340	1,265	5,721	986	3,048	6,109
3.....	5,712	4,869	14,251	4,511	7,399	13,682
4.....	31,510	4,680	38,699	30,405	6,922	38,235
5.....	104,421	2,066	107,849	131,081	2,096	133,699
6.....	59,283	702	60,207	65,431	628	66,295
7.....	18,816	226	19,092	24,862	233	25,206
8.....	6,210	99	6,333	8,384	97	8,528
9.....	2,171	33	2,213	2,833	40	2,887
10.....	1,047	3	1,059	1,266	17	1,295
11 and over .....	876	10	892	1,142	21	1,174
Not stated .....	175	47	750	(a)	(a)	(a)
<b>Total .....</b>	<b>231,640</b>	<b>14,094</b>	<b>259,344</b>	<b>271,045</b>	<b>20,802</b>	<b>299,630</b>
<b>Average number of rooms per dwelling.</b>	<b>5.38</b>	<b>3.80</b>	<b>5.17</b>	<b>5.46</b>	<b>3.56</b>	<b>5.25</b>

(a) At the 1966 Census where number of rooms was not stated a number was allocated before tabulation.

The number of rooms includes kitchen and enclosed sleep-out, but does not include bathroom, toilet, pantry, laundry or storehouse. A combined living-dining room or combined kitchen-living or kitchen-dining room was counted as one room. The largest increase in the five year period was in five roomed dwellings. In 1961 five roomed dwellings were 41.6 per cent of all occupied dwellings; by 1966 this percentage had increased to 44.6. The total increase in private dwellings was approximately 40,000 and nearly 26,000 of these were five roomed dwellings.

**Occupied Private Dwellings by Number of Inmates, South Australia,  
Censuses 1961 and 1966**

Number of Inmates per Dwelling	30 June 1961			30 June 1966		
	Private House	Self-contained Flat	Total (including other)	Private House	Self-contained Flat	Total (including other)
1.....	17,320	3,345	25,007	22,494	6,782	32,831
2.....	53,047	5,491	62,128	63,068	8,238	73,233
3.....	44,555	2,493	49,312	51,733	2,981	55,714
4.....	49,757	1,543	53,034	57,179	1,634	59,500
5.....	34,193	1,726	35,779	39,355	722	40,423
6.....	18,312	282	19,050	21,098	286	21,546
7.....	8,286	144	8,625	9,094	98	9,252
8.....	3,674	52	3,840	4,192	48	4,274
9.....	1,404	14	1,456	1,615	8	1,626
10.....	597	2	608	673	1	683
11 and over.....	495	2	505	544	4	548
Total .....	231,640	14,094	259,344	271,045	20,802	299,630
Total inmates	848,793	34,894	918,773	980,833	45,261	1,042,762
Average number of inmates per dwelling	3.66	2.48	3.54	3.62	2.18	3.48

There was a slight decrease in the average number of occupants per occupied private dwelling from 3.54 in 1961 to 3.48 in 1966. The figure fell from 4.02 in 1933 to 3.65 in 1947 and 3.49 in 1954, before rising to the 1961 figure.

**Occupied Private Houses and Self-contained Flats**

The tables in this section give details of occupied private houses and self-contained flats only.

The following table gives details of occupied private houses and self-contained flats by the type of occupancy.

For occupied private houses the proportion of owners and purchasers by instalments rose from 74.7 per cent to 77.0 per cent between the 1961 and 1966 Censuses and the proportion of tenants decreased from 23.0 per cent to 21.2 per cent. On the other hand the increase in occupancy of flats was largely on a rental basis—up from 75.8 per cent to 78.6 per cent.



**Occupied Private Houses and Self-contained Flats by Nature of Occupancy,  
South Australia, Censuses 1961 and 1966**

Nature of Occupancy	30 June 1961	30 June 1966			
	Total	Urban		Rural	Total
		Metropolitan	Other		
PRIVATE HOUSES					
Owner, purchaser by instalments . . .	173,146	145,337	29,019	34,378	208,734
Tenant of Housing Trust . . . . .	19,660	18,726	6,366	304	25,396
Other tenant . . . . .	33,661	14,785	7,623	9,684	32,092
Other methods of occupancy . . . . .	4,397	1,119	534	1,867	3,520
Not stated . . . . .	776	449	237	617	1,303
Total private houses . . . . .	231,640	180,416	43,779	46,850	271,045
SELF-CONTAINED FLATS					
Owner, purchaser by instalments . . .	3,080	3,585	214	219	4,018
Tenant of Housing Trust . . . . .	1,604	1,994	84	5	2,083
Other tenant . . . . .	9,082	12,568	1,324	378	14,270
Other methods of occupancy . . . . .	280	235	59	45	339
Not stated . . . . .	48	69	16	7	92
Total self-contained flats . .	14,094	18,451	1,697	654	20,802

**Occupied Private Houses and Self-contained Flats by Material of Outer Walls,  
South Australia, Censuses 1961 and 1966**

Material of Outer Walls	30 June 1961	30 June 1966			
	Total	Urban		Rural	Total
		Metropolitan	Other		
		PRIVATE HOUSES			
Brick .....	116,741	124,069	13,146	7,626	144,841
Brick veneer .....	(a)	11,251	2,051	515	13,817
Stone .....	57,379	18,229	15,415	21,357	55,001
Concrete .....	16,087	9,374	2,656	3,793	15,823
Wood .....	12,159	6,076	3,177	3,415	12,668
Iron, tin .....	7,898	1,499	1,660	2,579	5,738
Fibro-cement .....	20,359	9,679	5,449	7,330	22,458
Other .....	915	239	225	235	699
Not stated .....	102	(b)	(b)	(b)	(b)
Total private houses .....	231,640	180,416	43,779	46,850	271,045
		SELF-CONTAINED FLATS			
Brick .....	8,262	12,961	646	115	13,722
Brick veneer .....	(a)	437	38	13	488
Stone .....	3,259	2,270	560	294	3,124
Concrete .....	1,802	2,152	129	66	2,347
Wood .....	203	116	61	45	222
Iron, tin .....	164	84	73	40	197
Fibro-cement .....	325	419	181	80	680
Other .....	32	12	9	1	22
Not stated .....	47	(b)	(b)	(b)	(b)
Total self-contained flats ..	14,094	18,451	1,697	654	20,802

(a) At the 1961 Census dwellings with walls of brick veneer were not separately identified.

(b) At the 1966 Census material of outer walls was allocated before tabulation where this information was not stated.

At the 1966 Census the number of private dwellings with outer walls of brick (including brick veneer) represented almost 60 per cent of all private houses and self-contained flats. This was a significant increase over the 1961 proportion of just over 50 per cent, and well above the 1966 Australian figure of almost 40 per cent. Dwellings of stone walls accounted for nearly 25 per cent of the total in 1961 and fell to below 20 per cent in 1966. Despite this falling proportion, almost 80 per cent of all stone houses in Australia in 1966 were located in this

State. In Australia over 35 per cent of occupied private houses and self-contained flats had outer walls of wood, but in South Australia this proportion was less than 5 per cent.

**Occupied Private Houses and Self-contained Flats by Facilities,  
South Australia, Censuses 1961 and 1966**

Facilities	30 June 1961	30 June 1966			
	Total	Urban		Rural	Total
		Metropolitan	Other		
PRIVATE HOUSES					
Gas only .....	655	178	25	329	532
Electricity .....	125,539	66,262	33,886	35,954	136,102
Gas and electricity .....	100,293	113,762	9,565	9,253	132,580
Neither gas nor electricity .....	7,291	79	190	1,056	1,325
Not stated .....	749	135	113	258	506
Total private houses (a) ...	234,527	180,416	43,779	46,850	271,045
Television set .....	115,602	158,756	31,441	30,234	220,431
SELF-CONTAINED FLATS					
Gas only .....	16	30	2	6	38
Electricity .....	6,024	6,427	1,405	491	8,323
Gas and electricity .....	7,998	11,944	276	145	12,365
Neither gas nor electricity .....	20	8	2	5	15
Not stated .....	36	42	12	7	61
Total self-contained flats ..	14,094	18,451	1,697	654	20,802
Television set .....	5,978	12,907	705	369	13,981

(b) Includes sheds, huts, tents, etc.

The proportion of private houses that were stated to have gas and/or electricity increased from 96.6 per cent in 1961 to 99.3 per cent in 1966; the proportion for self-contained flats remained at 99.6 per cent over the same period. The percentage of private houses with television sets rose from 49.3 to 81.3 over the intercensal period while the percentage of self-contained flats with television rose from 42.6 to 67.2.

At the 1966 Census each householder was asked to state the number of motor vehicles (excluding motor cycles and scooters) used by members of that household that were garaged or parked at or near that dwelling on census night. Data was obtained only for private dwellings.

**Occupied Private Houses and Self-contained Flats by Number of Motor Vehicles  
South Australia, Census 1966**

Number of Vehicles	30 June 1966							
	Urban				Rural		Total	
	Metropolitan		Other					
	Houses	Flats	Houses	Flats	Houses	Flats	Houses	Flats
No vehicles .....	36,497	7,314	7,051	389	3,640	90	47,188	7,793
One vehicle .....	98,834	8,772	25,155	1,031	18,739	373	142,728	10,176
Two vehicles .....	34,969	1,281	8,623	196	13,036	127	56,628	1,604
Three vehicles .....	6,255	159	1,759	22	6,831	29	14,845	210
Four or more vehicles	1,247	43	546	12	3,864	14	5,657	69
Not stated .....	2,614	882	645	47	740	21	3,999	950
Total .....	180,416	18,451	43,779	1,697	46,850	654	271,045	20,802
Total vehicles..	192,929	12,010	50,118	1,549	82,794	778	325,841	14,337

**Unoccupied Dwellings**

Unoccupied dwellings include vacant dwellings available for sale or renting; dwellings such as weekenders or holiday homes and seasonal workers' quarters which were not occupied on Census night; dwellings normally occupied but whose occupants were temporarily absent on the night of the Census; newly completed dwellings where owners or tenants had not entered into occupation on Census night; dwellings described as 'to be demolished', 'condemned', 'exhibition home', etc.; and buildings constructed as dwellings but used for non-dwelling purposes on the night of the Census.

**Number of Unoccupied Dwellings by Class, South Australia,  
Censuses 1961 and 1966**

Class of Dwelling	30 June 1961	30 June 1966			
	Total	Urban		Rural	Total
		Metropolitan	Other		
Private house .....	15,073	7,339	4,122	8,330	19,791
Self-contained flat .....	1,132	2,178	344	135	2,657
Other private dwellings .....	109	161	482	1,650	2,293
Non-private dwellings .....	102	6	28	335	369
Not stated .....	645	—	—	—	—
<b>Total unoccupied dwellings.</b>	<b>17,061</b>	<b>9,684</b>	<b>4,976</b>	<b>10,450</b>	<b>25,110</b>

The intercensal increase in unoccupied other private and non-private dwellings is mainly the result of a better coverage at the 1966 Census of dwellings occupied for only a short period of time each year, such as shearers' huts, seasonal workers' quarters, etc.

The following table shows unoccupied dwellings classified by reason for being unoccupied.

**Unoccupied Dwellings by Reason for being Unoccupied, South Australia,  
Censuses 1961 and 1966**

Reason for Being Unoccupied	30 June 1961	30 June 1966
For sale or renting .....	3,386	6,014
Holiday house, 'weekender', seasonal workers' quarters .....	5,065	6,704
Occupants temporarily absent .....	4,767	4,832
Condemned or to be demolished .....	625	624
Other and not stated .....	3,218	6,936
<b>Total unoccupied dwellings .....</b>	<b>17,061</b>	<b>25,110</b>

There were 17,061 dwellings unoccupied at 30 June 1961 and only 3,386 were for sale or renting. Of the 25,110 dwellings unoccupied at the 1966 Census 6,014 were for sale or renting.

## BUILDING

### BUILDING CONTROL

The Building Act, 1923-1965 gives local government authorities power to control building operations within their municipality or district. This power is not automatic but follows a request from a local government authority for all, or a specified portion of its area, to be brought under the Act. In areas outside the jurisdiction of the Building Act certain building provisions under the Local Government Act, 1934-1969 apply.

Persons erecting or altering buildings on land coming under the Building Act are required to submit to a building surveyor appointed by the local government authority details and plans of the work envisaged and to receive written approval before commencing operations. Authorities concern themselves with such things as the size and location of buildings, the materials used, the height of ceilings and the provision of ventilation and drainage. They have the power to disapprove plans, subject to a right of appeal.

Following the approval of plans, local government inspectors visit the construction site to inspect foundations and may visit the site at other times to check that council requirements are being met.

In addition to administering the general site and structural requirements of the Act, authorities may effect their own by-laws on certain matters. A by-law may prescribe a higher minimum size for dwelling sites than that provided under the Act or may regulate the positioning of a dwelling on a site. One of the most important by-law powers is that of defining particular areas or zones within which the nature of buildings and their use may be restricted. Thus certain areas may be proclaimed residential areas with industrial and commercial premises, beyond those already in existence, prohibited; other areas are designated as industrial zones.

### BUILDING OPERATIONS

Details of building operations in South Australia are compiled from returns collected from all builders of new buildings. The statistics relate only to buildings as distinct from other construction activity such as roads, bridges, earth-works and water storage. Alterations and additions of \$10,000 and over to existing buildings are included with new buildings.

All values shown exclude the value of land and unless otherwise stated represent the anticipated or actual value of buildings upon completion.

#### **Building Approvals**

The following table shows the value of new buildings, and alterations and additions for which approval was given during 1967 and 1968. In addition to information on permits issued to private persons and organisations for building in areas subject to building control, particulars have been included of buildings known to be projected or to have started in areas outside building control and details of contracts let or expenditure authorised by governmental and semi-governmental authorities.

In using approvals as an indicator of building activity it should be noted that certain projects may be cancelled, delayed or altered and resubmitted for approval, that large projects may be spread over a number of years, and that building costs may vary over the period of construction.

## Building Approvals, South Australia

Type of Building	1967			1968		
	Private	Govt	Total	Private	Govt	Total
<b>New Buildings :</b>						
	Number					
Houses .....	5,061	795	5,856	5,229	1,307	6,536
Flats (a) .....	1,672	17	1,689	1,808	57	1,865
	\$'000					
Houses .....	46,013	4,875	50,888	49,750	7,430	57,180
Flats .....	8,311	71	8,382	9,564	340	9,904
Shops .....	7,052	218	7,270	4,775	720	5,495
Hotels, hostels, etc. ....	2,313	—	2,313	2,034	78	2,112
Factories .....	7,252	198	7,450	6,700	542	7,242
Office premises .....	4,974	2,997	7,971	8,118	1,607	9,725
Other business premises .....	6,082	4,366	10,448	4,528	3,371	7,899
Entertainment and recreation ....	1,223	274	1,497	1,643	158	1,801
Educational .....	2,033	22,232	24,265	1,183	14,929	16,112
Religious .....	685	—	685	683	—	683
Health .....	624	7,466	8,090	1,759	18,495	20,254
Miscellaneous .....	339	1,118	1,457	1,183	2,025	3,208
Total value .....	86,901	43,815	130,716	91,920	49,695	141,615
Alterations and additions (b) .....	14,075	1,058	15,133	14,593	2,173	16,766
Total value all building .....	100,976	44,873	145,849	106,513	51,868	158,381

(a) Number of individual dwelling units.

(b) Alterations and additions of \$10,000 or more are included with new buildings.

## Value of Work Done

Possibly the best measure of building activity is that of value of work done, i.e. of work actually carried out on buildings during the period.

## New Buildings: Value of Work Done, South Australia

Type of Building	1964	1965	1966	1967	1968
	\$'000				
Houses (a) .....	75,926	75,743	70,533	61,589	58,055
Flats (b) .....	7,542	11,324	7,568	6,311	8,810
Total dwellings (a) .....	83,468	87,067	78,101	67,900	66,865
Shops .....	6,292	4,354	3,984	8,425	8,731
Hotels, hostels, etc. ....	2,214	2,762	3,694	2,572	2,553
Factories .....	18,828	19,671	11,956	10,633	8,446
Office premises .....	7,104	5,794	9,444	11,243	8,924
Other business premises .....	5,520	7,056	5,324	8,144	11,997
Entertainment and recreation ....	1,652	1,824	1,899	1,708	1,725
Educational .....	9,230	13,932	15,626	11,145	12,079
Religious .....	2,364	2,113	1,512	806	806
Health .....	4,700	7,962	11,300	8,045	9,397
Miscellaneous .....	4,700	4,579	3,113	2,284	2,515
Total new buildings (a) .....	146,072	157,114	145,953	132,905	134,038

(a) Excludes owner-built houses.

(b) Includes home units.

Information on the value of work done on owner-built houses is not collected. However, an estimate based on the value of houses commenced, completed and under construction is calculated for such houses, yielding figures of \$4.7 million for each of the years 1966 and 1967, and \$3.5 million for 1968.

### Buildings Under Construction

At the end of 1968 new buildings with an anticipated value when completed of \$104,747,000 were in the process of construction, with work done on these buildings valued at \$52,896,000. There were 3,165 houses and 880 flats in the course of construction, having an anticipated value when completed of \$33,072,000.

### New Buildings Commenced

A building is recorded as commenced when work on the foundation has begun. In the table below commencements during 1967 and 1968 have been classified according to ownership at the date of commencement. Almost all houses recorded under the 'government' heading were being built for the South Australian Housing Trust, many of them being intended for sale on completion.

#### New Buildings<sup>(a)</sup> Commenced, South Australia

*Number of dwelling units and anticipated completion value (\$'000) of new buildings commenced*

Type of Building	1967			1968		
	Private	Govt	Total	Private	Govt	Total
	Number					
Houses .....	5,305	1,996	7,301	5,096	1,728	6,824
Flats (b) .....	1,363	—	1,363	1,770	63	1,833
	\$'000					
Houses .....	48,774	13,817	62,591	49,648	11,804	61,452
Flats (b) .....	6,596	—	6,596	9,815	370	10,185
Shops .....	6,966	171	7,137	4,687	576	5,263
Hotels, hostels, etc. ....	2,872	36	2,908	1,994	78	2,072
Factories .....	8,296	180	8,476	6,980	636	7,616
Office premises .....	4,243	3,103	7,346	8,844	1,214	10,058
Other business premises .....	5,473	3,876	9,349	4,895	6,203	11,098
Entertainment and recreation .....	1,541	328	1,869	1,700	394	2,094
Educational .....	1,792	7,341	9,133	1,209	16,763	17,972
Religious .....	673	—	673	744	—	744
Health .....	851	1,030	1,881	2,123	6,669	8,792
Miscellaneous .....	1,114	1,174	2,288	1,100	1,644	2,744
Total value of new buildings commenced .....	89,191	31,056	120,247	93,739	46,351	140,090

(a) Alterations and additions of \$10,000 or more are included with new buildings.

(b) Includes home units.

### New Buildings Completed

Details of new buildings completed for the years 1959-1968 are given below. A building is regarded as having been completed when the contractor has fulfilled the terms of the contract or in the case of an owner-built house when the dwelling is either completed or occupied, whichever occurs first. However, the value in all cases is that of the building as a finished product.

## New Buildings Completed, South Australia

Year	Number of Dwellings		Value of New Buildings			
	Houses	Flats (a)	Houses	Flats (a)	Other	Total
			\$'000	\$'000	\$'000	\$'000
1959.....	8,628	591	55,966	2,778	29,508	88,252
1960.....	9,379	790	63,326	4,042	37,190	104,558
1961.....	9,119	709	62,052	3,724	37,808	103,584
1962.....	9,280	583	61,966	3,198	49,404	114,568
1963.....	10,316	816	70,396	4,162	45,092	119,650
1964.....	10,869	1,279	78,148	6,264	54,288	138,700
1965.....	10,597	2,149	79,443	11,612	66,257	157,312
1966.....	10,095	1,607	78,810	8,288	56,824	143,922
1967.....	8,335	1,317	69,132	6,191	65,890	141,213
1968.....	6,896	1,603	61,138	8,173	73,003	142,314

(a) Includes home units.

The following table gives further details of dwellings completed over the five years to 1968. A noticeable feature of the table is the increasing relative importance of flats which accounted for 18.9 per cent of dwelling completions in 1968.

Most of the flat building has taken place in the local government areas of Unley, West Torrens, Burnside and Glenelg.

## Number of New Dwellings Completed, South Australia

Type of Dwelling	1964	1965	1966	1967	1968
<b>Private:</b>					
Contract-built houses .....	7,380	6,834	6,264	5,136	4,473
Owner-built houses (a) .....	557	624	560	596	402
Total houses .....	7,937	7,458	6,824	5,732	4,875
Flats (b) .....	1,252	2,045	1,607	1,317	1,580
Total private dwellings ....	9,189	9,503	8,431	7,049	6,455
<b>Government:</b>					
Houses .....	2,932	3,139	3,271	2,603	2,021
Flats .....	27	104	—	—	23
Total government dwellings	2,959	3,243	3,271	2,603	2,044
Total all dwellings .....	12,148	12,746	11,702	9,652	8,499

(a) Owner-built are houses erected without services of contractor for whole job.

(b) Includes home units.

The value of buildings, other than dwellings, completed over the same period is shown below. Included under 'other business premises' are service-stations, warehouses and communication buildings and under 'miscellaneous' are defence establishments, buildings for law and order and certain institutional premises.

**Value of New Buildings Other Than Dwellings Completed<sup>(a)</sup>, South Australia**

Type of Building	1964	1965	1966	1967	1968
	\$'000				
Shops .....	3,990	6,228	3,647	4,133	12,487
Hotels, hostels, etc. ....	1,968	2,733	3,959	2,340	2,561
Factories .....	17,528	20,201	11,510	12,271	7,965
Office premises .....	4,440	5,903	2,844	8,870	14,898
Other business premises .....	5,232	7,634	5,367	7,026	7,635
Entertainment and recreation ...	1,418	1,815	2,103	1,448	1,835
Educational .....	9,072	10,665	15,374	17,006	9,588
Religious .....	1,204	2,813	1,923	971	723
Health .....	5,714	3,777	6,166	9,020	13,014
Miscellaneous .....	3,722	4,488	3,931	2,805	2,297
<b>Total .....</b>	<b>54,288</b>	<b>66,257</b>	<b>56,824</b>	<b>65,890</b>	<b>73,003</b>

(a) Includes alterations and additions of \$10,000 and over to existing buildings.

**New Houses—Material of Outer Walls**

A plentiful supply of clay and building stone together with a paucity of suitable timbers has resulted in the majority of South Australian houses being of solid construction. In the table below new houses are classified according to the materials used in the outer walls.

**New Houses: Material of Outer Walls, South Australia**

Year	Brick, Concrete, Stone		Brick Veneer and Stone Veneer		Fibro-Cement		Other	
	Number	Value	Number	Value	Number	Value	Number	Value
		\$'000		\$'000		\$'000		\$'000
COMMENCED								
1964 .....	7,892	60,292	2,985	18,778	605	3,454	42	374
1965 .....	6,247	52,850	3,314	20,964	604	3,481	32	274
1966 .....	5,780	50,174	2,922	19,649	549	3,398	19	130
1967 .....	4,598	43,150	2,091	15,472	557	3,636	55	333
1968 .....	4,415	44,330	1,784	13,055	549	3,637	76	430
COMPLETED								
1964 .....	8,475	63,212	1,740	11,144	614	3,450	40	342
1965 .....	7,101	57,458	2,825	18,007	638	3,679	33	299
1966 .....	5,990	52,032	3,506	23,147	579	3,492	20	139
1967 .....	5,060	46,534	2,634	18,380	594	3,919	47	299
1968 .....	4,179	41,719	2,129	15,612	509	3,387	79	420

The use of brick veneer in house building increased from 10 per cent of commencements when first recorded in 1962, to 32 per cent in 1965, and fell to 26 per cent in 1968. The majority of brick veneer houses are built by the South Australian Housing Trust.

**Location of New Dwellings**

In recent years the greatest development has occurred in the Municipalities of Salisbury and Tea Tree Gully; during the four years 1965 to 1968 new dwellings in these areas accounted for 18.5 per cent of the total State completions. Of the country local government areas Whyalla recorded the greatest number of completions each year from 1959 to 1967; Noarlunga recorded the greatest number of completions in 1968.



## Location of New Houses and Flats Completed, South Australia

Local Government Area	1964	1965	1966	1967	1968
Brighton .....	240	315	170	129	122
Burnside .....	449	533	352	337	244
Campbelltown .....	846	668	595	518	322
Elizabeth .....	(a)376	446	107	225	113
Enfield .....	895	729	695	353	322
Glenside .....	223	230	149	146	179
Henley and Grange .....	235	230	200	91	196
Marion .....	731	507	384	380	328
Meadows .....	69	79	92	112	126
Millicent .....	38	67	112	70	80
Mitcham .....	583	745	582	461	421
Mount Gambier Municipality ..	117	91	77	126	104
Munno Para .....	545	662	727	370	332
Murray Bridge .....	45	70	99	85	32
Noarlunga .....	541	500	527	605	716
Payneham .....	207	296	119	129	62
Port Adelaide .....	469	312	170	263	93
Port Augusta Municipality .....	56	62	76	80	99
Port Lincoln Municipality .....	75	111	117	101	90
Salisbury .....	(a)1,661	1,276	1,454	1,078	612
Stirling .....	82	74	79	73	94
Tea Tree Gully .....	917	1,096	1,200	580	567
Unley .....	177	451	274	205	209
West Torrens .....	422	621	625	435	505
Whyalla .....	307	511	634	682	617
Woodville .....	503	478	421	284	311
Other .....	1,339	1,586	1,665	1,734	1,603
Total State .....	12,148	12,746	11,702	9,652	8,499

(a) From July 1964 Elizabeth Corporation and Salisbury Corporation separately incorporated: previously combined as Salisbury and Elizabeth District Council and earlier as Salisbury District Council.

## Building Employment

Details of building employment in South Australia are given in the next table. The figures are an average of the number of persons employed on four days in the year, namely at the end of March, June, and September and in mid-December. They include all contractors and sub-contractors, and employees of contractors, sub-contractors and government instrumentalities, who on these four days were engaged on the construction, alteration, repair and maintenance of buildings, but exclude persons working on owner-built houses or for contractors or sub-contractors who undertake only alterations, additions, repairs, and maintenance. Persons 'actually engaged' include those temporarily laid off because of weather. Some duplications may occur as a result of frequent movement between jobs or because some persons (such as electricians) may work on several jobs which are under construction simultaneously.

The average employment figure of 11,796 for 1968 was made up of 5,671 persons working on new private dwellings, 4,082 working on other new buildings and 2,043 employed on additions, alterations, repairs and maintenance.

## Building Employment, South Australia

Classification	1964	1965	1966	1967	1968
PERSONS ENGAGED					
Occupational status:					
Contractors .....	694	696	663	647	639
Sub-contractors .....	3,469	3,543	3,164	2,900	2,830
Wage-earners .....	10,506	10,746	9,747	8,862	8,327
Trade:					
Carpenters .....	3,808	3,873	3,595	3,299	3,118
Bricklayers .....	2,589	2,573	2,244	1,983	1,931
Painters .....	1,415	1,413	1,283	1,116	1,059
Electricians .....	759	800	782	705	690
Plumbers .....	1,315	1,335	1,233	1,090	1,060
Builders labourers .....	1,997	2,102	1,895	1,697	1,545
Other .....	2,786	2,889	2,542	2,519	2,393
Total .....	14,669	14,985	13,574	12,409	11,796

## THE SOUTH AUSTRALIAN HOUSING TRUST

The South Australian Housing Trust was constituted by Act of Parliament in 1937. It provides houses and flats for rental and houses for sale.

## Rental Dwellings

When the Trust commenced operations in 1937 it was confined by legislation to the building of houses for rental only which severely restricted the capital cost per house in order to keep the rents within the means of lower paid workers. For this reason the Trust for many years built only the double unit attached type of dwelling although subsequent legislation made possible the building of single unit houses for letting. When the statutory limitations upon the cost and rent of houses were extended, and then removed, larger and better appointed houses were built.

During 1967-68 the Trust completed 1,203 houses for letting, most of which were of double unit construction.

Since 1952 the Trust has built a number of flats most of which are in two- and three-storey blocks and let to married couples without young children or to people living alone. At 30 June 1968, 1,365 flats of this type had been completed. In 1953 the Trust began building small groups of cottage flats for elderly people and had completed 1,556 by 30 June 1968, 619 of these were built for charitable organisations and the remaining 937 were being let by the Trust. To meet the requirements of persons without children who can afford to pay a rent higher than that charged for a cottage flat but less than the rent charged for a flat in a two- or three-storey building the Trust has built 71 single-storey villa flats.

## Dwellings for Sale

The Trust began building houses for sale in 1946.

At first, purchasers were required to pay the purchase price either from their own resources or by obtaining a mortgage from a financial institution. However, in 1952 the Trust established a scheme under which it advances an amount on second mortgage. During the year ended 30 June 1968, 720 houses for sale were completed under this scheme. In 1962 a further scheme was introduced

whereby certain houses, known as rental-purchase houses, are made available on \$100 deposit under agreement for sale and purchase.

A variety of sizes and designs are offered for sale, generally grouped on Trust land although the Trust will build any of its standard designs on private land anywhere in the State. It also erects houses for primary producers, and between 1946 and 1962 completed 932 houses for settlers under the War Service Land Settlement Scheme. When requested by State Government departments, the Trust erects houses for purchase by these departments for the accommodation of their employees.

Details of dwellings completed by the Trust since its inception, both for rent and for sale, are given in the following table.

**South Australian Housing Trust, Number of Dwellings Completed<sup>(a)</sup>**

Period	Houses		Flats		Rural Dwellings including Soldier Settlers	Total
	Single Units	Double Units <sup>(b)</sup>	Cottage Flats	Other		
1937-1963 ..	23,646	(c)19,819	934	1,276	1,233	46,908
1963-64 ....	1,779	942	81	55	1	2,858
1964-65 ....	2,465	714	93	45	—	3,317
1965-66 ....	2,469	588	140	53	—	3,250
1966-67 ....	2,292	722	214	—	—	3,228
1967-68 ....	1,519	745	94	17	—	2,375
Total ..	34,170	23,530	1,556	1,446	1,234	61,936

(a) Excludes emergency and temporary dwellings.

(b) Number of individual dwelling units.

(c) Includes a small number of triple-units.

In its early years the Trust built small groups of houses with rental and sale houses generally in different locations. With the extension of its activities, however, the Trust had to build much larger housing complexes including what amounts to a complete town at Elizabeth where rental and sale houses are intermixed. Because of its emphasis on providing housing for those working in industry and because it has the power, subject to the Industries Development Committee, to erect and lease factories, the Trust has played an important role in the location of industry in South Australia.

Most of the funds used to finance the building operations of the Trust are borrowed either from the State Government under the Commonwealth-State Housing Agreement or from semi-government raisings arranged in conjunction with the State Treasury. Details of funds employed, and of the revenue and expenditure of the Trust in recent years are given on page 558.

#### COMMONWEALTH-STATE HOUSING AGREEMENTS

In July 1953 the State Government became party to an agreement already existing between the Commonwealth and certain other States under which the Commonwealth Government makes substantial loans to the States for the provision of housing. The initial agreement was renewed in 1956, 1961 and again in 1966 for a further five years.

Under the present agreement the Commonwealth makes advances to the State for the erection of dwellings by the South Australian Housing Trust and for the provision of finance for home builders by means of loans, through the Home Builders Fund, to the State Bank and certain building societies. At least 30 per cent of the funds provided must be channelled through the Home Builders Fund. The advances with interest are repayable by the State over fifty-three years.

A total of \$211,179,000 had been loaned to the State under these agreements to 30 June 1968 providing for a total of 36,983 dwellings to 30 June 1967.

#### Commonwealth-State Housing Agreement, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Advances for year:					
Housing Trust .....	9,200	10,000	10,200	10,000	10,150
Home Builders Fund .....	10,200	10,500	10,857	10,750	10,850
Total .....	19,400	20,500	21,057	20,750	21,000
Liability at end of year:					
Housing Trust .....	82,456	91,801	101,270	110,452	119,709
Home Builders Fund .....	40,569	50,807	61,332	71,680	82,054
Total .....	123,025	142,608	162,602	182,132	201,763

#### DEPARTMENT OF HOUSING

The Commonwealth Department of Housing was established in January 1964. The principal activities of the Department in South Australia are the administration of the War Service Homes Act and the recently created Homes Savings Grant Scheme.

##### War Service Homes

The War Service Homes Branch of the Department of Housing originated in the War Service Homes Commission which was set up in 1919 to help provide homes for ex-servicemen and their dependants.

Persons currently eligible for assistance include members of the Australian forces and nursing services who served outside Australia in the 1914-18 War, the 1939-45 War, in Korea, Malaya or Vietnam or in other areas as specified from time to time by the Commonwealth Government. Also eligible are other British ex-service personnel who were resident in Australia prior to enlistment and certain members of the mercantile marine services. Assistance may be granted to the widow or, in some cases, the widowed mother of an eligible person.

Assistance is given in building a home, in purchasing a new or existing home, or in discharging a mortgage which has been arranged with the prior approval of the Branch. In certain circumstances a person who has not received the maximum loan may receive a further loan to undertake certain additions. The maximum loan available at 30 June 1968 was \$7,000 and the interest rate 3½ per cent.

Services provided by the Branch to persons building a home include the preparation of plans and specifications and the arranging and supervision of construction.

Funds used by the War Service Homes Branch are made available from Commonwealth Consolidated Revenue.

#### War Service Homes Branch, South Australia

Year	Activities During Year		Advances Outstanding at End of Year	
	Homes Provided	Capital Advanced	Number	Amount
		\$'000		\$'000
1963-64 .....	695	5,078	15,718	67,900
1964-65 .....	752	5,510	16,008	70,564
1965-66 .....	847	6,200	16,577	74,117
1966-67 .....	566	4,150	16,693	75,402
1967-68 .....	419	3,000	16,729	75,476

#### Homes Savings Grants

Under the Homes Savings Grant Scheme introduced in 1964, married and widowed persons under thirty-six years of age who have lived and saved in Australia for at least three years may become eligible for a grant of \$500 to assist them in obtaining a home. To be eligible for the maximum grant a couple must have saved \$1,500 in an acceptable form and have entered into a contract for the purchase or construction of a dwelling on or after 2 December 1963 or, if an owner-builder, have commenced construction on or after that date. Persons who have saved less than \$1,500 may qualify for a reduced grant. Moneys already expended on the purchase of land or on the purchase or construction of a dwelling may be included in acceptable savings. An application for a grant must be lodged not later than twelve months after signing a contract or commencing to build, although, in special circumstances an application lodged after twelve months will be considered.

A total of 11,356 homes savings grants had been approved in South Australia to 30 June 1968, the total payment of \$4,796,000 representing an average of \$422 per grant.

#### OTHER HOME FINANCE SOURCES

The State Bank of South Australia advances funds provided by the State Government under the Advances for Homes Act, 1928-1968, funds provided from the Home Builders Fund, and its own funds.

The Savings Bank of South Australia advances its own funds either as Homes Act loans guaranteed by the State Treasurer or on its own terms.

Homes Act loans are also arranged by the South Australian Superannuation Fund, in addition to loans on its own terms.

The Commonwealth Savings Bank and the private savings banks make long-term housing advances.

At 1 October 1968 maximum loans available from the above institutions varied from \$6,000 up to \$9,000, with differing rates for new and existing houses and for solid and timber frame construction. Interest rates charged ranged from 5½ per cent to 6½ per cent and periods of repayment from fifteen to forty years.

The private trading banks make overdraft advances, dependent on the credit status of the borrower, for short periods normally not exceeding five years. Interest rates on these advances varied between 6 and 7½ per cent.

Life assurance companies make housing loans which are normally collaterally secured by a life assurance policy. Maximum loan limits vary considerably between companies but in general are higher than those offered by the banks. Maximum repayment terms are for up to thirty years and interest rates at 1 October 1968 varied between 6½ and 8 per cent.

Another source of housing finance is the building societies, details of which are given on pages 586-7. One such society makes Homes Act loans and together with two other societies advances moneys made available from the Home Builders Fund.

#### **Housing Loans Insurance Scheme**

The Housing Loans Insurance Corporation was established by the *Housing Loans Insurance Act* 1965, assented to on 4 May 1965 to insure approved lenders against losses arising from the making of housing loans. The main purpose of the activities of the Housing Loans Insurance Corporation is to assist people to obtain, as a single loan and at a reasonable rate of interest, the money they need and can afford to borrow to obtain a home suited to their requirements.

The Housing Loans Insurance Corporation insures loans that are made for a wide range of purposes in addition to the purchase or construction of a dwelling. The other purposes include alterations, extensions or improvements to a dwelling, and the provision or improvement of roads, kerbing and footpaths. An insured loan may be made only by an approved lender. The approved classes of lenders include banks, building societies, co-operative housing societies, friendly societies, life insurance companies and trustee companies.

During 1967-68, 576 housing loans aggregating \$4,496,000 were insured in South Australia.

## **PART 9**

# **PRODUCTION**

### **9.1 RURAL INDUSTRIES**

Rural statistics are prepared from annual returns collected from every holding of one acre or more, used for the production of agricultural products or the raising of livestock (including poultry) and the production of livestock products.

Returns are collected from some 29,000 holdings in South Australia each year. Particulars relate to rural operations for one complete year ended 31 March but where harvesting of some crops (mainly fruit) has not been completed by that date, returns are collected shortly afterwards.

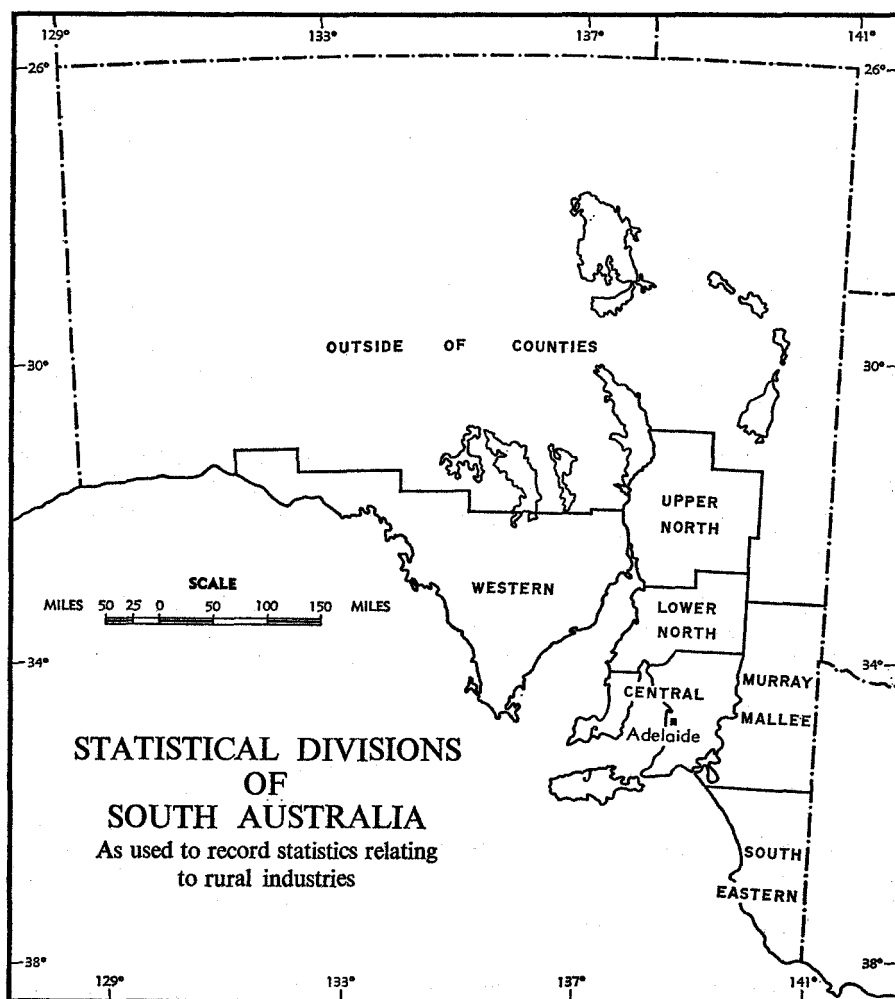
An owner or occupier who works more than one holding is normally required to report details for each holding. However, where the holdings are near to one another and are in effect worked as one farm, a composite return is obtained, and is treated as covering a single holding in the district in which the main farm is situated.

Statistical divisions used for rural production statistics are shown on Map 9. These divisions are a combination of a number of counties which are proclaimed areas with immutable boundaries. The area beyond the counties is for all practical purposes treated as a seventh division. These divisions should not be confused with statistical divisions referred to in relation to other statistics; such divisions, as shown in the detailed map inside the back cover, are based on combinations of local government areas.

The number and area of holdings in each division for the past three years are shown in the following table.

## Rural Holdings, Statistical Divisions, South Australia

Statistical Division	Holdings			Area of Holdings		
	1965-66	1966-67	1967-68	1965-66	1966-67	1967-68
	Number			'000 Acres		
Central .....	12,642	12,816	12,935	5,821	5,845	5,791
Lower North .....	3,244	3,228	3,185	5,010	4,945	4,940
Upper North .....	1,172	1,152	1,132	9,291	9,359	9,352
South Eastern .....	4,273	4,279	4,307	5,434	5,419	5,427
Western .....	2,440	2,434	2,466	18,168	18,153	18,095
Murray Mallee .....	4,837	4,896	4,878	8,132	8,066	8,176
Outside of Counties ..	151	152	155	107,538	109,723	108,984
Total .....	28,759	28,957	29,058	159,394	161,510	160,765



MAP 9



A classification of rural holdings by size and by type of main activity was made in 1966. The following table gives a summary of all rural holdings, those under wheat, barley, and oats and those carrying sheep and cattle classified by area of the holding in 1965-66.

**Classification of Holdings by Size and Principal Activities, South Australia 1965-66**

Size of Holding	Total Holdings	Holdings with					
		Wheat for Grain	Barley for Grain	Oats for Grain	Sheep	Dairy Cattle	Beef Cattle
Acres		Number					
1- 99 ...	10,750	261	225	85	1,274	2,441	735
100- 199 ...	2,054	210	178	124	850	1,189	437
200- 499 ...	3,072	1,003	724	552	2,199	1,518	851
500- 999 ...	3,930	2,447	1,773	1,339	3,607	1,684	1,369
1,000-1,999 ...	4,253	2,811	2,248	1,914	4,039	1,637	1,809
2,000-4,999 ...	3,083	2,175	1,594	1,468	2,907	1,071	1,317
5,000 and over.	1,617	889	520	616	1,496	506	771
<b>Total</b>	<b>28,759</b>	<b>9,796</b>	<b>7,262</b>	<b>6,098</b>	<b>16,372</b>	<b>10,046</b>	<b>7,289</b>

The classification of holdings by type of main activity is based on estimates of gross receipts of each activity made by allocating values to areas of crops and livestock numbers reported on the returns submitted for the year ended 31 March 1966.

The following table gives a summary of the type of activity of rural holdings in each statistical division.

**Rural Holdings Classified by Type of Activity, South Australia, 1965-66**

Type of Activity	Statistical Division							Total
	Central	Lower North	Upper North	South Eastern	Western	Murray Mallee	Outside of Counties	
	Number of Holdings							
<b>Commercial holdings:</b>								
Sheep—Cereal grain .....	1,749	1,334	404	342	1,661	1,245	—	6,735
Sheep .....	1,221	204	317	2,055	151	178	103	4,229
Cereal grain ...	517	843	139	8	318	151	—	1,976
Beef cattle ....	85	6	7	162	2	14	39	315
Dairying .....	2,000	107	16	793	9	201	—	3,126
Vineyards .....	456	43	—	4	—	1,093	—	1,596
Fruit (other than vine) .....	689	21	8	3	2	870	—	1,593
Vegetables; Potatoes ..	175	—	3	18	—	—	—	196
Other and mixed ...	857	42	21	7	—	98	—	1,025
Poultry .....	299	19	5	6	5	24	—	358
Pigs .....	108	27	5	18	22	19	1	200
Other .....	14	4	1	9	—	—	—	28
Multi-purpose ..	737	147	42	143	40	210	—	1,319
<b>Total classified ..</b>	<b>8,907</b>	<b>2,797</b>	<b>968</b>	<b>3,568</b>	<b>2,210</b>	<b>4,103</b>	<b>143</b>	<b>22,696</b>
<b>Unclassified:</b>								
Sub-commercial	2,181	323	117	431	97	381	1	3,531
Unused, special, etc. ....	1,554	124	87	274	133	353	7	2,532
<b>Total holdings</b>	<b>12,642</b>	<b>3,244</b>	<b>1,172</b>	<b>4,273</b>	<b>2,440</b>	<b>4,837</b>	<b>151</b>	<b>28,759</b>

**HISTORY OF FARMING DEVELOPMENT**

The first moves away from Adelaide occurred very soon after the settlement was established. Delays in having the country surveyed had prevented the

planned occupation of farm lands and some of the more determined settlers made for the country in an attempt to make a living from the land. Because these settlers had come from a green, well-watered land and because the country to the north of Adelaide seemed to be too dry and dusty for cultivation, the first moves were to the hills districts near Mount Barker and the fertile southern areas of Strathalbyn, Willunga and Yankalilla. In these first few years large numbers of sheep and cattle were imported from New South Wales and a considerable part of the present settled area of the State had been occupied for pastoral purposes by 1850.

When the demand for grain increased there was a move to farm additional areas. With no equipment other than hand tools, clearing virgin land was a formidable task. Because it carried light bush and little timber and was handy to the port facilities at Adelaide, the plain country centred on Gawler was the next area opened to farming. The production of excellent crops on these plains led to the opening of large tracts of land north as far as Port Augusta. By 1860 farming was established in the South East and had commenced in lower Eyre Peninsula. The sheep population had reached nearly 3 million.

The country in Central, Lower North, Upper North and South Eastern Divisions was being developed and most of the rich wheat areas in Central, Lower North and Upper North had been occupied by 1880. Large areas of this land were heavily timbered with mallee eucalypt which has a large root system, the clearing of which presented a major problem to the farmers. The introduction of the techniques of flattening the scrub with large rollers made from old steam boilers, burning this scrub, sowing a scratch crop and then burning the stubble to kill regrowth enabled this land to be opened up. Two inventions were of importance—the stump-jump plough which made tilling on this land possible and the mechanical reaper which made large-scale farming economical.

By 1900 all but three of the counties had been declared but the settlement on new farming lands between 1880 and 1900 was not significant. However, the next twenty years saw a considerable extension of the cultivated areas, despite a disastrous drought in 1914. In this period the area under crop and lying fallow increased by 50 per cent. The areas developed were mainly the difficult light soils of the Murray Mallee and Eyre Peninsula. The influence of farmers leaving the low rainfall northern counties and taking their experience of farming under marginal conditions to these two areas, together with the wide acceptance of the need for artificial fertiliser in cereal farming, produced the marked success which followed. In 1901 artificial fertiliser was used on only 37 per cent of the area cropped while in 1920 the figure was 86 per cent.

The very high prices obtained for agricultural products after the 1914-18 War and the Government drive for greater production resulted in the opening up of extensive areas of mallee lands. The area under cultivation reached a peak of 8 million acres in 1930 but within two or three years it was realised that the type of crop-fallow rotation in general use was seriously damaging the light soils of these 'marginal' farming areas and by 1935 the area under cultivation had been reduced to 7.3 million acres. Sheep numbers increased steadily from 6 million to 10 million in the 1930s.

The 1939-45 War had a marked effect on the area under cultivation, which fell to approximately 4.5 million acres in 1943-44 and the drought of the following season caused sheep numbers to fall to less than 7 million. From this time, modern farming techniques were applied. Mixed sheep-cereal farming was rapidly extended, crop-pasture and crop-pasture-fallow rotations were widely

adopted, and large areas of marginal mallee lands brought into economic production. Improved strains of cereals were introduced and larger quantities of superphosphate used on cereals and pastures. By these means the area under cultivation has exceeded 13 million acres and the number of sheep 17 million. The increased production obtained since 1940 has come from the adoption of better farming methods rather than the opening of new land.

## CHARACTERISTICS OF FARMING AREAS

### GEOGRAPHY AND CLIMATE

Two thirds of the area of the State, from the northern boundary down to latitude 32°S, is mainly desert and unsuitable for agriculture. The rainfall is low and erratic, coming mainly from thunderstorms, and averages less than 8 inches per annum. High day temperatures during a large part of the year cause a very high rate of evaporation.

South of latitude 32°S is an area where the rainfall is rather more regular and somewhat higher; this land, mostly semi-arid, is transitional between the desert and the agricultural regions. Small areas are planted to cereals and extensive areas adjacent to the River Murray are irrigated from the waters of the river and devoted to horticulture and viticulture.

A third region extending as far as latitude 36°S enjoys an average annual rainfall varying according to locality between 10 and 25 inches per year and has a reliable growing season of five months or more. This is the main agricultural region of the State and much of the area is devoted to ley farming, producing wheat, barley, oats, fruit and vegetables and carrying sheep and cattle.

The south-eastern part of the State has a rainfall in excess of 20 inches per year but the physiography is not congenial to agriculture, most of the usable area being devoted to grazing and afforestation.

### Average Rainfall Over Agricultural Areas

Cereal crops (of which wheat is the most important) are sown following opening rains, which are normally expected in April or May. The growing season varies between districts, but generally can be considered as the eight months April to November, and good rains during this period are vital to the success of the season's harvest.

A further calculation of average rainfall for each county in which a significant amount of crops is grown (33 counties at present) is obtained by taking the mean of recordings at a number of stations spread through the area. An average, weighted by the area under crop in each county, is then calculated for each statistical division, and the entire agricultural area of the State. Details are given in the next two tables.

The average rainfall for the wheatgrowing season fell as low as 6.83 inches in the 1914 drought, 6.28 inches in 1959 and 6.37 inches in 1967. In both the Upper North and Murray Mallee Divisions, average falls of under 5 inches have been experienced. The highest average over the growing season was 19.18 inches in 1916, while in the South Eastern Division the average frequently exceeds 20 inches. A more detailed discussion, together with maps and with special reference to the cereal growing season was included on pages 5-9 of *South Australian Year Book 1966*.

**Average Rainfall Over Agricultural Areas, Statistical Divisions, South Australia**  
*Wheatgrowing Seasons*

Statistical Division	1963	1964	1965	1966	1967	1968 (p)
	Inches					
Central .....	17.59	17.78	11.14	12.41	7.01	18.70
Lower North .....	16.19	14.75	11.13	10.29	6.09	17.04
Upper North .....	12.98	12.89	10.09	8.49	5.99	17.28
South Eastern .....	15.01	25.23	15.55	16.68	8.52	22.73
Western .....	13.76	15.31	9.74	11.92	6.75	16.53
Murray Mallee .....	12.91	13.51	9.29	7.54	4.56	11.59
Total .....	14.93	15.85	10.51	11.09	6.37	16.58

(p) Preliminary.

The next table gives a dissection of the State figures shown above for each of the eight months of the wheatgrowing season.

**Average Rainfall Over Agricultural Areas, Monthly, South Australia**  
*Wheatgrowing Seasons*

Month	1963	1964	1965	1966	1967	1968 (p)
	Inches					
April .....	1.76	1.58	0.52	0.24	0.14	1.81
May .....	3.04	1.31	2.00	1.42	0.78	2.94
June .....	2.98	1.75	1.34	1.87	0.35	2.92
July .....	3.14	3.18	1.88	2.41	1.81	2.26
August .....	1.93	1.45	2.28	1.18	1.73	2.65
September .....	0.88	2.87	1.24	2.04	1.12	0.91
October .....	0.93	1.71	0.23	1.22	0.38	1.80
November .....	0.27	2.00	1.02	0.71	0.05	1.30
Total .....	14.93	15.85	10.51	11.09	6.37	16.58

(p) Preliminary.

### CHARACTERISTICS OF STATISTICAL DIVISIONS

In this section, some general details are given regarding soil types and natural vegetation in each statistical division.

#### Central Division

This division has an area of nearly 6 million acres in rural holdings. The topography, soils and rainfall vary more than in any other part of the State.

The Kangaroo Island and Yorke Peninsula regions are both relatively flat with shallow brown soils over limestone or sand over clay. These soils are loose and coarse and are generally known as mallee soils. On the southern part of Yorke Peninsula are areas of calcareous sands and in the northern parts of Kangaroo Island there are areas of fertile red-brown earths with some areas of deep acid sands. The central area of the division is dominated by the Mount Lofty hills with leached sandy loam overlying a heavy clay and large areas of rocky outcrops or shallow soil over rock, fertile valleys or deep loam grading to red-brown earths on some slopes.

The elevated areas of the peninsula to the south of Adelaide contain large pockets of acid-grey soils, while the northern and eastern portions of the division comprise mainly mallee type soils and red-brown earths. Natural vegetation varies from red gums, blue gums, peppermints, sheoaks and many types of shrubs and grasses on the Mount Lofty hills to savannah regions adjacent to the hills area. Mallee type eucalypt, scattered areas of shrub and various species of annual and perennial grasses are native to the remainder of Central Division.

The combination of suitable soils, climate and rainfall and the provision of reticulated water in an area in close proximity to Adelaide has led to the development of vegetable, fruit and dairying industries in the fertile valleys and undulating country associated with the Mount Lofty hills. Yorke Peninsula is the main barley growing area in Australia, and wheat is grown extensively in all areas except Kangaroo Island and the higher rainfall areas near and to the south of Adelaide. Sheep are grazed generally throughout Central Division.

### **Lower North Division**

This is the smallest of the six divisions with some 5 million acres in rural production. The western and south-western portions are coastal plains, for the most part mallee soils of all types—sandy, grey, loamy and shallow red. The central area is undulating hill country with open valleys and associated flats; the hills have large areas of shallow soils and rock outcrops while the valleys and flats are mostly red-brown earth, sandy and loamy mallee soils with some heavy brown soils. The lightly undulating plains in the eastern section are mainly mallee soils.

The hill or range country was originally open grassland with savannah woodland in the wetter areas. The coastal plains were covered with mallee eucalypt, native shrubs and grasses while the eastern plains carried some low mallee scrub.

Lower North Division produces 20-25 per cent of the grain grown in the State. The range country is largely unimproved and is used for grazing sheep on natural grasses. Most of the studs which produce the South Australian type Merino sheep are located in this area.

### **Upper North Division**

The whole of the division containing 9 million acres in rural holdings is dominated by the Flinders Ranges, grading from precipitous slopes with little if any topsoil in the north, to hill country in the south. This hill country changes through undulating country to the semi-arid plateau of the interior.

Because the rainfall is low and the evaporation rate high most of the area which is not precipitous is used for grazing and cannot be used for agriculture. Only in parts of the south-western quarter is the rainfall sufficient for the growing of wheat.

### **South Eastern Division**

With over 5 million acres devoted to rural production this is the second smallest division. The area is characterised by many ranges of low hills or dunes, lying parallel to the coast, but merging into the east-west pattern of the dunes further north. Deep sands are often associated with these hills which usually have a limestone base or core. Large areas of copper-deficient and zinc-deficient soils have been made productive by the use of these trace elements in

plant fertilisers. This previously unproductive land is now carrying large numbers of livestock and producing excellent crops. In the southern half of the division, considerable areas of dark soils occupy the plains between the ranges and because the ranges are parallel to the coast with virtually no natural drainage, these areas usually have a high water table. This combination led to considerable submerging of the land in winter and extensive artificial drainage has been needed to control the level of the water table to permit cropping and the cultivation of pastures. Near the coastline extensive sand dune formations of low fertility render large tracts of land completely unproductive.

The natural vegetation of the northern regions is mainly mallee eucalypt with yacca, broombush and banksia. The higher rainfall areas to the south produce red, blue and swamp gums with native grasses, while white tussock and wallaby grass occur in some areas.

The country is mainly devoted to grazing, 40 per cent of the improved pasture in the State being in the division. Sheep grazing is fairly general throughout, while beef cattle and dairy cattle are concentrated mainly in the southern portion. The area under crop is only about 5 per cent of the total area cropped in the State.

#### **Western Division**

This is by far the largest division with over 18 million acres devoted to rural production. A large part has mallee type soils mixed with small areas of heavier loams. There is a dune system along large tracts of the western coastline grading to limestone inland of the dunes. In the southern extremity of Eyre Peninsula are large areas of sandhills. In the south-eastern section there are considerable areas of red-brown soils, with in many cases ironstone gravel in the topsoil. The north-eastern section of the division is mainly desert relieved only by the Middleback Ranges consisting for the most part of hard sandstone.

The natural vegetation is predominantly mallee eucalypt and sheoak with scattered sugar gums and native pines on the hills. Broombush is found in places on mallee soils. Speargrass and spinifex grow on the coastal sand dunes and the arid north-eastern desert carries scattered mulga with saltbush and bluebush.

Although yields are moderate, the large area under cultivation produced 40 per cent of the State's total harvest of cereals for the 1967-68 season, with wheat being the main crop. The major pastoral activity is sheep grazing.

#### **Murray Mallee Division**

This division has 8 million acres used for rural production. A large part of the area is undulating, with sandy rises and firmer sandy or sand-loam flats. The rises run roughly east-west following the direction of the prevailing winds. Near the River Murray there are shallow brown soils over limestone while in the southern parts the soils are mainly mallee types. The natural vegetation is predominantly mallee eucalypt with scattered patches of native pines and sheoaks.

The main crops are wheat and barley with small areas of oats grown for forage and cereal rye for soil stabilisation. Because the growing season is short and rainfall light and erratic, most of the area cropped in the northern regions is wheat, with most of the barley being grown in the southern section. Irrigation areas are scattered along the River Murray, in many cases extending no further than two or three miles from the river. About one half of the area of orchards and vineyards in the State is concentrated in these irrigated areas.

The division carries about 10 per cent of the sheep and dairy cattle, the sheep being grazed throughout the area and the dairy cattle being concentrated along the flood flats of the Lower Murray.

#### Outside of Counties

The whole area is fairly flat with low mountains or mountain ranges intruding in three or four places. The soils are varied in character, sometimes capable of growing vegetation but unproductive in the absence of adequate rainfall. In this region are found the thin red soils of the Nullarbor Plains, the desert sand hills, the gibber deserts, the sand plains and the spinifex areas.

Approximately 75 per cent of the area of the State is 'Outside of Counties' and no part of this area receives an average annual rainfall of more than 8 inches. Not only is the rainfall low but it is quite irregular and large areas receive no useful falls for very long periods. High daytime temperatures experienced over a large part of the year cause rapid surface evaporation.

The native vegetation consists of those species which have become adapted to the climatic conditions of the region. The trees are scattered mulga with some native pines on the hills and areas of saltbush and bluebush. The few annual plants which are found have very rapid life cycles, being quick flowering and producing large quantities of seed. Large areas of the north-west and north-east are almost devoid of vegetation, being merely sand or gibber deserts.

The region cannot support any agriculture but an area of more than 100 million acres is leased for pastoral purposes and carries about 100,000 beef cattle and one million sheep.

### RURAL POPULATION

The number of persons of all ages residing permanently on rural holdings in South Australia in March during the past ten years is shown in the following table. These figures include those temporarily absent at the time, but exclude visitors, etc. Rural population has remained fairly stable during the ten year period, while the State population has risen by almost 25 per cent.

#### Persons Permanently Resident on Rural Holdings, South Australia

*At 31 March*

Year	Males	Females	Persons	Year	Males	Females	Persons
1959....	57,989	51,087	109,076	1964....	58,510	51,854	110,364
1960....	58,889	52,320	111,209	1965....	58,016	51,361	109,377
1961....	59,098	52,245	111,343	1966....	57,932	51,298	109,230
1962....	59,441	52,243	111,684	1967....	58,028	51,270	109,298
1963....	58,668	51,825	110,493	1968....	56,992	50,411	107,403

### RURAL EMPLOYMENT

In the following table particulars are given of permanent and temporary rural employment and salaries and wages paid during the last five years. The figures include male and female workers. Females engaged mainly in domestic duties are excluded from the table.

## Rural Employment and Wages, South Australia

At 31 March

Particulars	1964	1965	1966	1967	1968
Persons					
Permanent workers:					
Owners, lessees, etc. ....	24,270	23,850	23,560	22,993	22,048
Relatives (not paid wages) ..	1,600	1,369	981	712	433
Employees .....	8,769	8,703	8,565	8,398	7,902
Total .....	34,639	33,922	33,106	32,103	30,383
Temporary workers .....	17,835	16,294	15,763	16,178	15,106
Total workers .....	52,474	50,216	48,869	48,281	45,489
\$'000					
Salaries and wages (a):					
Permanent workers .....	13,339	13,976	14,503	15,225	15,410
Temporary workers .....	10,018	11,110	11,473	12,399	12,499
Total .....	23,357	25,086	25,976	27,624	27,909

(a) During year ended 31 March.

## FARM MACHINERY

Particulars of farm machinery on rural holdings in South Australia for each of the last six years, and in each statistical division at 31 March 1968 are given in the next two tables.

## Farm Machinery on Rural Holdings, South Australia

At 31 March

Type of Machine	1963	1964	1965	1966	1967	1968
Shearing machines :						
Machines .....	14,595	14,885	15,172	15,386	15,392	15,758
Stands .....	27,528	28,149	28,844	29,291	29,343	29,786
Milking machines :						
Machines .....	7,553	7,438	7,328	7,040	6,634	6,645
Units .....	18,836	19,057	19,135	18,833	18,143	18,399
Rotary hoes and rotary tillers .....	4,989	5,260	5,670	5,883	5,442	5,597
Tractors :						
Wheeled .....	28,497	29,841	30,772	30,984	32,507	33,230
Crawler .....	3,174	3,390	3,392	3,014	3,322	3,360
Grain drills :						
Combine .....	15,251	15,284	15,617	15,589	15,489	15,665
Other .....	5,065	5,074	5,168	5,201	5,093	5,240
Fertiliser distributors	8,213	8,413	8,743	8,893	9,166	9,710
Harvesters, headers and strippers ....	12,677	12,617	12,659	12,393	11,579	11,905
Forage harvesters ....	645	660	675	764	765	845
Pick-up balers .....	3,791	4,149	4,258	4,609	4,760	4,992



**Farm Machinery on Rural Holdings, Statistical Divisions, South Australia**  
**At 31 March 1968**

Type of Machine	Statistical Division						Total
	Central	Lower North	Upper North	South Eastern	Western (a)	Murray Mallee	
Shearing machines :							
Machines .....	4,671	2,533	989	3,153	2,511	1,901	15,758
Stands .....	7,810	4,736	2,013	6,331	5,463	3,433	29,786
Milking machines :							
Machines .....	3,428	818	200	1,344	310	545	6,645
Units .....	9,847	1,612	368	4,540	491	1,541	18,399
Rotary hoes and rotary tillers	2,921	594	175	537	379	991	5,597
Tractors :							
Wheeled .....	11,698	4,250	1,237	4,836	4,881	6,328	33,230
Crawler .....	1,231	229	143	529	803	425	3,360
Grain drills :							
Combine .....	4,765	3,008	832	1,555	3,068	2,437	15,665
Other .....	1,492	491	91	930	1,221	1,015	5,240
Fertiliser distributors .....	4,217	756	135	2,123	1,100	1,379	9,710
Harvesters, headers and strippers	3,507	2,315	586	1,062	2,509	1,926	11,905
Forage harvesters .....	327	78	12	216	78	134	845
Pick-up balers .....	1,901	872	199	1,099	399	522	4,992

(a) Includes Outside of Counties.

### AGRICULTURE

Most of the land area of South Australia is arid or semi-arid and cannot be used for agricultural production. This severe natural limitation means that even with modern farming methods only 12 million of more than 150 million acres in rural holdings are devoted to cropping or permanent improved pasture. The area under crop in recent years has been between 5 and 6 million acres. Most of this area is planted to cereals for the production of grain, hay and forage. About 120,000 acres are used for the production of fruit and vegetables.

The numbers of holdings growing twenty or more acres of the principal cereals or one acre or more of the principal fruits and vegetables are shown in the following table.

#### Rural Holdings Growing Principal Crops, South Australia

Holdings (a)	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
	Number					
With 20 acres or more of:						
Wheat .....	9,881	9,902	9,657	9,387	9,419	8,905
Barley .....	7,146	7,196	6,890	6,688	6,772	6,850
Oats .....	4,967	5,704	5,034	4,879	5,532	4,979
With 1 acre or more of:						
Grapes .....	3,056	3,054	3,091	3,082	3,104	3,065
Citrus fruits .....	1,653	1,686	1,704	1,707	1,674	1,629
Other orchard fruits	3,288	3,280	3,302	3,298	3,253	3,175
Potatoes .....	850	692	614	670	674	682

(a) Holdings growing more than one of the crops shown are counted for each crop.

The cereals wheat, barley and oats sown for grain account for about 80 per cent of the total area cropped in South Australia. Hay and green forage of all kinds exceed 14 per cent and the remainder of the area is devoted mainly to orchards, vineyards and vegetable production. Climatic conditions, particularly the relatively low winter rainfall and the dry hot summer, favour cereal growing;

one advantage being the low incidence of stem rust, a serious disease in the moister areas of the Australian wheat belt.

The area sown to the more important crops during the last five seasons is given in the following table.

Area Sown to Principal Crops, South Australia

Crop	1963-64	1964-65	1965-66	1966-67	1967-68
	'000 Acres				
Grain:					
Wheat .....	2,802.2	2,726.8	2,744.9	2,960.3	2,864.2
Barley .....	1,123.1	1,094.7	1,098.1	1,107.0	1,156.6
Oats .....	500.6	443.8	454.6	508.8	524.9
Rye .....	31.3	43.9	36.4	56.6	57.9
Hay:					
Oaten .....	140.7	110.1	111.8	135.1	157.8
Other .....	216.9	204.2	186.8	346.7	271.2
Green forage .....	378.1	462.5	474.0	419.9	399.5
Vegetables:					
Potatoes .....	5.5	5.3	5.8	5.9	6.5
Tomatoes .....	1.2	1.0	1.1	1.4	1.4
Other .....	9.8	9.3	9.7	10.1	9.6
Fruit:					
Grapes .....	58.7	58.9	58.7	57.1	58.1
Oranges .....	16.5	17.4	18.3	17.4	17.5
Apples .....	5.9	6.0	5.9	5.9	5.9
Apricots .....	4.5	4.7	4.8	4.8	4.8
Other .....	14.8	14.9	14.9	16.0	16.9
Other crops .....	70.0	87.0	67.4	83.5	55.8
Total area under crop ..	5,379.8	5,290.5	5,293.2	5,736.5	5,608.6

Cereal growing played a significant part in the early development of South Australia. The success of the first crops on the Adelaide plains led to a strong demand for suitable wheat land, but expansion of the cereal industry was halted shortly before 1880 when the downward trend of the average yields brought the realisation that the exploitation of the soil had seriously reduced the level of fertility.

Experiments revealed the deficiency of phosphates in South Australian soils and showed that the application of superphosphate, linked with rotation farming, would revive them. The widespread adoption of this practice at the turn of the century resulted in higher yields and a further expansion of the cereal areas. The technique of fallowing also was used to improve yields but it failed to stop the consumption of organic matter causing the deterioration of the soil structure. Furthermore farmers were over-tilling and towards the 1930s wind and water so severely eroded the unprotected soil surface that thousands of acres were laid waste. To overcome the erosion problem, soil conservation services were established. The value of contour cultivating and pasture establishment was demonstrated and subsequently adopted by landholders with considerable success. Also demonstrated was the method of stabilising sandhill drifts by sowing them to cereal rye.

With soil erosion arrested, attention was focused on finding ways of maintaining the natural physical structure of the soil. Research revealed nitrogen as the key factor directly related to soil fertility and this led to the introduction of nitrogen-building legume pastures. Another advance made at this time was the



*Australian Fisheries*

The fish ramp at Port Adelaide where the public can buy fish direct from the fishermen.



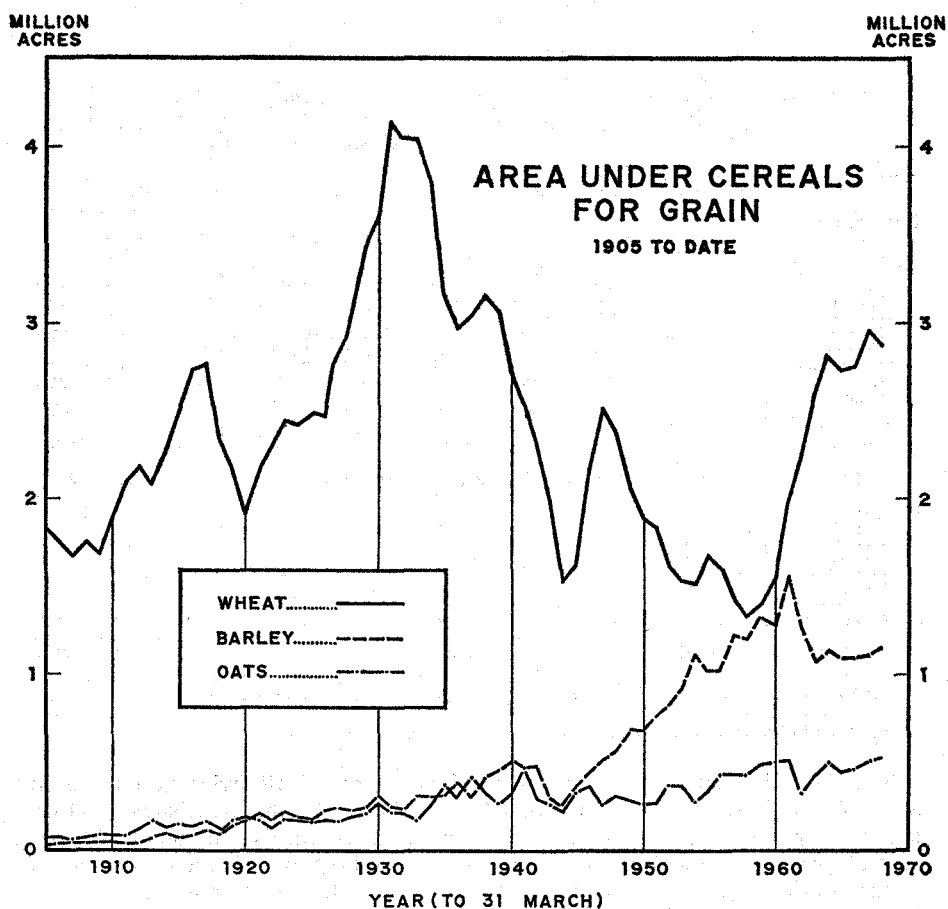


A view over Port Noarlunga and Christies Beach to, in the top left, the oil refinery at Port Stanvac and the adjacent motor vehicle engine plant. In the background can be seen the large housing sub-division built by the South Australian Housing Trust to provide accommodation near this new industrial site.

discovery of trace element deficiencies in certain areas, particularly the manganese deficiency in the soils of Yorke Peninsula and the molybdenum, copper and zinc deficiencies in other parts of the State.

The adoption in recent years of more suitable cropping programmes with the resulting increased yield and profitable association with woolgrowing has firmly established the cereal industry.

The extent of fluctuations since 1905 in the area under the three main cereal crops is illustrated by the following graph.



### IRRIGATED CULTURE

The most important irrigation areas are those located in the Murray Valley. A description of the development and types of irrigation schemes along the River Murray is given in Part 8.2 pages 310-2.

The remainder of the areas under irrigation are located mainly in the Central and South Eastern Divisions where irrigation is applied predominantly to vegetables, hay and green forage crops and to pastures.

The main crops are grapes, citrus fruit and stone fruit in the Upper Murray, and green forage and pastures in the reclaimed swamp areas of the Lower Murray. Details for individual areas in 1967-68 are given below. It should

be noted that area of vineyards is shown for drying or wine according to the purpose for which the grapes were used in 1967-68 and not according to variety. The acreages can fluctuate from year to year because of dual purpose grapes (e.g. sultanas) grown in South Australia. In 1967-68 the demand for grapes for winemaking was greater than in 1966-67.

**River Murray Irrigation Areas: Area and Production of Principal Crops<sup>(a)</sup>  
1967-68**

Irrigation Area	Area				Production				
	Green Forage and Pasture (b)	Vineyards		Orchards	Vineyards			Orchards	
		For Drying	For Wine		Total Grapes Produced	Grapes Used for Wine	Currants, Sultanas and Raisins Dried	Oranges	Peaches
Acres	Acres	Acres	Acres	Tons	Tons	Tons	'000 Bushels	'000 Bushels	
Upper Murray:									
Berri .....	149	1,608	3,310	3,663	27,317	19,979	1,988	288.0	159.7
Cadell .....	16	229	268	376	1,581	908	187	32.1	6.0
Cobdogla .....	43	157	1,002	80	8,950	8,161	221	3.1	2.7
Cooltong .....	59	41	393	840	3,563	3,252	74	164.9	14.2
Holder .....	2	30	239	617	1,289	1,198	26	53.9	12.7
Loveday .....	380	477	1,665	491	15,085	12,441	715	38.4	6.2
Loxton .....	10	652	3,054	3,372	28,620	25,157	925	450.6	107.2
Moorook .....	17	74	292	754	2,308	1,884	119	60.1	19.7
Nookamka .....	6	359	1,442	274	12,544	10,533	550	20.8	2.6
Ral Ral .....	225	376	356	302	3,177	1,747	396	1.0	22.6
Renmark .....	961	2,034	3,236	3,695	22,974	15,121	2,188	270.1	259.3
Sunlands .....	—	—	98	1,577	722	718	—	30.1	24.7
Waikerie .....	10	104	1,414	3,175	9,087	8,558	128	336.8	137.8
Other .....	87	373	472	2,615	4,123	2,736	386	116.0	195.8
Total .....	1,965	6,514	17,241	21,831	141,340	112,393	7,900	1,865.7	971.3
Lower Murray:									
Cowirra .....	933	—	—	—	—	—	—	—	—
Jervois .....	4,960	—	—	10	—	—	—	0.3	—
Monteith .....	929	—	—	—	—	—	—	—	—
Mypolonga .....	1,149	—	6	1,033	41	41	—	116.7	25.5
Neeta .....	493	—	—	—	—	—	—	—	—
Pompoota .....	726	—	—	—	—	—	—	—	—
Other .....	1,644	—	—	16	—	—	—	1.0	0.1
Total .....	10,834	—	6	1,059	41	41	—	118.0	25.6

(a) Excludes areas and yields of crops grown by irrigation on the River Murray and elsewhere not in the above irrigation areas.

(b) Total within irrigated areas, including non-irrigated forage and pastures.

The following table shows the approximate area of all irrigated culture in South Australia for the seasons 1963-64 to 1967-68. Of the areas shown below, about 70 per cent of orchards, 80 per cent of vineyards and about 20 per cent of green forage and pastures are in the River Murray Irrigation Areas listed in the previous table. The acreage shown as green forage is area cut for green forage and ensilage. The increase in 1967-68 reflects the need to irrigate pasture in such areas as the South East because of the low rainfall in 1967.

**Area Under Irrigated Culture<sup>(a)</sup>, South Australia**

Season	Orchards	Vineyards	Vegetables	Green Forage	Other Crops	Pasture	Total
				Acres			
1963-64 .....	28,787	27,954	10,541	4,451	12,315	33,822	117,870
1964-65 .....	30,094	28,286	9,917	4,303	14,575	35,964	123,139
1965-66 .....	31,089	28,850	10,665	3,642	12,995	41,594	128,835
1966-67 .....	32,122	28,268	12,341	3,257	20,463	42,306	138,757
1967-68 .....	32,512	30,616	13,290	7,400	25,738	63,622	173,178

(a) Approximations only.

## FERTILISERS

Nearly all soils in the agricultural areas of South Australia are deficient in phosphoric acid, and superphosphate is used on both crops and pastures in large quantities to overcome this deficiency. In some areas trace elements (manganese, copper, zinc and molybdenum) are added to the superphosphate to rectify the chronic shortage of these elements.

A summary of the area of crops and pastures treated and the quantities of fertiliser used in 1967 is shown in the following table.

**Principal Crops and Pasture Fertilised, South Australia  
1967**

Type of Crop	Area Fertilised	Super-phosphate	Other	Total	Per Acre
	'000 Acres	Tons	Tons	Tons	Cwt
Wheat .....	2,793	152,389	2,870	155,259	1.11
Barley, oats and rye .....	2,049	104,127	1,942	106,069	1.04
Vegetables .....	14	3,039	5,398	8,437	12.40
Fruit trees and vines .....	57	4,697	8,487	13,184	4.64
Other and unspecified crops .....	121	8,712	739	9,451	1.56
<b>Total crops .....</b>	<b>5,033</b>	<b>272,964</b>	<b>19,436</b>	<b>292,400</b>	<b>1.16</b>
<b>Pasture .....</b>	<b>5,130</b>	<b>302,513</b>	<b>4,964</b>	<b>307,477</b>	<b>1.20</b>
<b>Total .....</b>	<b>10,163</b>	<b>575,477</b>	<b>24,400</b>	<b>599,877</b>	<b>1.18</b>

The following tables show the area of crops and pastures treated and the quantity of fertiliser used in each division in 1967, and in the State for the years 1958 to 1967.

**Use of Artificial Fertilisers, Statistical Divisions, South Australia  
1967**

Statistical Division	Crops				Pastures		
	Area Fertilised	Proportion of Total Area Cropped	Fertiliser Used	Fertiliser Used per Acre	Area Fertilised	Fertiliser Used	Fertiliser Used per Acre
	'000 Acres	Per Cent	Tons	Cwt	'000 Acres	Tons	Cwt
Central .....	990	88.71	65,868	1.33	1,163	71,031	1.22
Lower North .....	920	91.60	45,125	0.98	275	13,002	0.95
Upper North .....	211	89.31	8,955	0.85	33	1,649	1.00
South Eastern .....	267	81.04	17,309	1.30	2,633	166,322	1.26
Western (a) .....	1,726	90.76	103,171	1.20	602	31,994	1.06
Murray Mallee .....	918	90.00	51,972	1.13	424	23,479	1.11
<b>Total .....</b>	<b>5,033</b>	<b>89.73</b>	<b>292,400</b>	<b>1.16</b>	<b>5,130</b>	<b>307,477</b>	<b>1.20</b>

(a) Includes small areas Outside of Counties.

**Use of Artificial Fertilisers, South Australia**

Year	Crops				Pastures		
	Area Fertilised	Proportion of Total Area Cropped	Fertiliser Used	Fertiliser Used per Acre	Area Fertilised	Fertiliser Used	Fertiliser Used per Acre
	'000 Acres	Per Cent	Tons	Cwt	'000 Acres	Tons	Cwt
1958 .....	3,692	89.03	192,168	1.04	3,716	218,728	1.18
1959 .....	3,679	90.64	188,733	1.03	3,471	202,895	1.17
1960 .....	4,326	87.11	209,387	0.97	3,300	189,704	1.15
1961 .....	4,063	90.11	206,047	1.01	3,583	198,186	1.11
1962 .....	4,415	89.52	221,011	1.00	3,750	209,551	1.12
1963 .....	4,788	89.01	238,905	1.00	3,993	226,678	1.14
1964 .....	4,775	90.25	254,268	1.07	4,714	274,558	1.16
1965 .....	4,869	91.99	265,132	1.09	5,093	296,830	1.17
1966 .....	5,123	89.30	286,896	1.12	5,237	311,912	1.19
1967 .....	5,033	89.73	292,400	1.16	5,130	307,477	1.20



**Aerial Agriculture**

During recent years increasing use has been made of aircraft for top-dressing and seeding, for spraying of crops and pastures, and for pest and vermin extermination.

The following table shows details of area treated, materials used and flying time for the five years ended 31 March 1968.

**Aerial Agriculture, South Australia**

Year	Area Treated			Material Used		Flying Time
	Fertiliser and Seed	Sprayed	Total	Super-phosphate	Seed	
		'000 Acres		Tons	'000 lb	Hours
1963-64 .....	985	196	1,181	52,305	284	6,890
1964-65 .....	1,181	182	1,363	54,454	748	7,767
1965-66 .....	908	270	1,178	46,392	269	7,056
1966-67 .....	903	372	1,276	46,850	n.a.	7,822
1967-68 .....	n.a.	237	n.a.	n.a.	217	5,609

n.a.—Not available.

**WHEAT**

Wheat has always been a crop of major importance to the economy of South Australia although in recent years this importance has declined in relation to both the value of agricultural and pastoral production and the value of total State production. For the five-year period 1909-10 to 1913-14 wheat averaged 38 per cent of agricultural and pastoral production and 23 per cent of total State production while for the period 1962-63 to 1966-67 the percentages were 23 and 8 respectively. The increase in woolgrowing in the first instance and the rapid industrialisation of the State in the second have been the significant factors in this decline.

The expansion of the wheat industry in the first fifty years of the colony was made possible by the development of the stripper, a machine which considerably reduced the labour and costs of harvesting. For a period South Australia was the largest wheat producing State, but it now ranks fourth in order of importance, and for the ten harvests ending 1966-67 averaged 14 per cent of Australian wheat production.

The first stage of the development of the wheat industry saw a rapid expansion of the wheat area until 1,970,000 acres were sown in 1886-87, yielding for the first time a 10 million bushel harvest. Smaller acreages were then sown until in 1909-10 a second great surge of development began, culminating in the highest recorded area of 4,180,513 acres in 1930-31.

A complete reversal in the acreage trend occurred after 1932-33 due to the impact on the industry of the economic crisis of the 1930s following immediately in the wake of four severe droughts during 1926-29. About this time it was realised that wheat farming had been extended into areas where the inadequate rainfall and unsuitable land made wheat growing uneconomic and a number of these properties on 'marginal' lands were abandoned. In 1940 the Marginal Lands Act gave authority for properties to be purchased by the Government and leased to settlers to enlarge their holdings. Grants were made to assist these settlers in making grazing rather than wheatgrowing their major enterprise. Most of the properties were repurchased in the period 1940-47.



A swing towards barley-growing at the same time exerted a further depressing effect on the area sown to wheat. This trend continued until 1958-59 when the area sown to barley almost equalled the area sown to wheat. However, recently the wheat acreage has increased greatly, to more than double that of barley.

In the past twenty years a feature of the industry has been a steady improvement in average yields, due mainly to improved farming practices including the adoption of nitrogen-building clovers in the rotation. The average yield per acre for the ten seasons ended 1967-68 was 16.35 bushels, a record of 23.56 bushels being attained in 1960-61. Wheat production in 1967-68 was down to about half the production of the previous year due to the dry start and finish to the season. Rainfall over cereal growing areas during the growing period April to November 1967 was 6.37 inches, compared with the average of 12.75 inches.

### Wheatgrowing Districts

Wheatgrowing in South Australia is virtually restricted to the belt between the 8 inch and 18 inch rainfall isohyets for the period April-November inclusive. The principal wheat producing districts are Eyre Peninsula, the Central and Lower North regions and the Murray Mallee. These districts accounted for over 90 per cent of the area sown in 1967-68.

### Wheat Sown for Grain: Area and Production, Statistical Divisions South Australia

Season	Statistical Division						Total
	Central	Lower North	Upper North	South Eastern	Western (a)	Murray Mallee	
AREA ('000 Acres)							
1958-59 ..	220	367	90	21	501	208	1,407
1959-60 ..	230	421	111	29	572	187	1,550
1960-61 ..	310	502	130	38	680	309	1,969
1961-62 ..	346	540	138	59	764	382	2,229
1962-63 ..	399	602	170	70	910	444	2,595
1963-64 ..	417	637	180	66	1,002	500	2,802
1964-65 ..	413	611	167	60	1,037	439	2,727
1965-66 ..	398	601	168	55	1,069	454	2,745
1966-67 ..	417	614	181	64	1,246	439	2,960
1967-68 ..	369	566	166	70	1,267	426	2,864
PRODUCTION ('000 Bushels)							
1958-59 ..	5,490	9,766	2,136	615	11,215	2,810	32,032
1959-60 ..	2,621	3,861	947	440	2,937	1,123	11,929
1960-61 ..	7,854	14,470	3,464	927	14,806	4,875	46,396
1961-62 ..	6,741	11,274	1,737	1,199	8,421	4,482	33,854
1962-63 ..	7,156	10,876	2,106	1,699	11,951	4,551	38,339
1963-64 ..	9,198	15,687	3,832	1,322	17,235	6,697	53,971
1964-65 ..	9,459	14,712	3,377	1,210	17,823	6,236	52,817
1965-66 ..	6,663	10,418	2,111	1,224	15,031	4,529	39,976
1966-67 ..	8,099	13,533	3,330	1,830	23,954	3,070	53,816
1967-68 ..	3,775	6,202	1,893	594	12,456	1,980	26,899

(a) Includes small areas Outside of Counties.

### Varieties of Wheat

The early wheatgrowers recognised the need to develop varieties of wheat suitable for South Australia's dry conditions and began by experimenting with varieties obtained from countries with a similar climate. One of these was the variety of Du Toit which was introduced from South Africa and because of

its early maturity and moderate resistance to stem rust became very popular. This variety was destined to feature in the pedigree of many prominent wheat varieties of the future. Although stem rust, which can be a serious problem in other States, is rarely troublesome in South Australia, breeders have still considered rust resistance as important as other objectives such as yield, baking quality and resistance to other diseases.

Of the varieties sown in the 1967-68 season, Insignia, Heron, Gabo and Gamenya were the four most important. The main attributes of Insignia, the leading variety, are that it is early maturing, has a short strong straw and is easily threshed at harvest without showing any tendency for the grain to crack. Heron, Gabo and Gamenya have very similar features to Insignia. The similar climatic requirements of these four leading varieties reflect the suitability of this type of wheat for South Australia. The sharp cut-off of spring rains, the short growing season and strong winds have demanded their particular characteristics. The leading varieties of wheat sown for all purposes for the years 1965-66 to 1967-68 are shown in the following table.

Principal Varieties of Wheat Sown, South Australia

Variety	Area			Proportion of Total Area		
	1965-66	1966-67	1967-68	1965-66	1966-67	1967-68
	'000 Acres			Per Cent		
Dirk .....	208	176	142	7.4	5.8	4.8
Gabo .....	381	299	232	13.6	9.9	7.9
Gamenya .....	60	188	232	2.2	6.2	7.9
Heron .....	489	707	880	17.5	23.4	29.8
Insignia .....	1,045	1,037	924	37.4	34.4	31.3
Pinnacle .....	60	58	54	2.1	1.9	1.8
Raven .....	94	175	175	3.4	5.8	5.9
Sabre .....	222	171	135	7.9	5.7	4.6
Other .....	239	207	178	8.5	6.9	6.0
Total area...	2,798	3,017	2,952	100.0	100.0	100.0

## Research

Under the *Wheat Tax Act* 1965 a tax of a quarter of a cent per bushel is levied on all wheat delivered to the Australian Wheat Board. The proceeds are then credited to the Wheat Research Trust Account for use by the respective State Wheat Industry Research Committees. Each committee allocates the amounts available for research and reports the expenditure approved to the Wheat Industry Research Council. The Commonwealth Government also makes contributions for wheat research, up to an amount equal to the wheat tax levied from the growers. The Wheat Industry Research Council recommends the avenue of research on which this grant should be spent.

Wheat research in South Australia is directed mainly at producing better wheat varieties and improving soil structure.

## Marketing

### *Australian Wheat Board*

The Board consists of a chairman, a finance member, a person engaged in commerce with experience of the wheat trade, a representative of flour mill owners, a representative of employees and ten representatives of wheatgrowers (two from each mainland State).

The Board has control over the receipt and disposal of all wheat and wheat products. It also controls the handling, storage and shipment of wheat. Under the stabilisation plan, the Board is the sole authority for marketing wheat within Australia and for marketing wheat and flour for export.

In its first full season, 1939-40, the Wheat Board received 195 million bushels. For the past eight seasons wheat receipts have exceeded 200 million bushels with a record delivery in excess of 439 million bushels during 1966-67.

#### Deliveries to the Australian Wheat Board<sup>(a)</sup>

Season	South Australia	Australia	Season	South Australia	Australia
	'000 Bushels			'000 Bushels	
1958-59 .....	29,549	199,417	1963-64 .....	51,660	307,837
1959-60 .....	9,112	179,339	1964-65 .....	49,991	346,511
1960-61 .....	43,706	251,481	1965-66 .....	36,160	234,394
1961-62 .....	30,738	224,290	1966-67 .....	50,007	439,212
1962-63 .....	35,121	285,722	1967-68 .....	22,084	247,371

(a) Mostly in bulk, but includes weight of bags where used.

During the year ended 30 November 1967 total exports of wheat (including wheat equivalent of flour and wheat products) were 377 million bushels. The value of the Wheat Board's sales on both the local and export market is shown below.

#### Australian Wheat Board Sales of Wheat and Wheat Flour

Crop Year	Sales		Value	
	Local	Export	Local	Export
	'000 Bushels		\$'000	
1957-58 .....	54,626	26,444	77,312	36,669
1958-59 .....	53,654	144,722	77,796	190,939
1959-60 .....	59,338	118,674	87,986	156,989
1960-61 .....	54,920	195,582	83,255	261,906
1961-62 .....	52,371	171,412	82,486	244,990
1962-63 .....	51,180	233,806	81,042	317,292
1963-64 .....	56,613	250,281	82,282	357,660
1964-65 .....	74,730	270,835	108,924	362,337
1965-66 .....	66,869	166,917	101,480	240,654
1966-67 .....	61,229	377,384	94,424	545,928

#### Bulk Handling

The South Australian Co-operative Bulk Handling Ltd which was incorporated on 7 December 1954 is the sole bulk grain handling authority in this State and is owned, financed and controlled by the growers. At 31 December 1968 the Co-operative had a total storage capacity of 71.4 million bushels (61.6 million bushels permanent storage and 9.7 million bushels emergency storage). A further 11 million bushels storage capacity (7 million permanent and 4 million emergency storage) is planned or under construction for the next season.

South Australia was the last of the major cereal-growing States to adopt bulk handling methods. However, the success of the first bulk installation at Ardrossan of one million bushels capacity, which began operating in 1952, paved

the way for rapid development. The Co-operative purchased the Ardrossan silo from the Australian Wheat Board after a Bill had been passed on 7 July 1955 giving the Co-operative the exclusive right to handle bulk grain in South Australia.

Finance for the construction of storages came initially from a bank advance, and in addition growers who were members of the Co-operative were required to pay a toll of 1.7 cents for each bushel delivered to the silo in the first year. Thereafter the toll for members and non-members was 5 cents per bushel and 3.4 cents per bushel respectively. After twelve years of membership, members are gradually refunded all tolls paid. From time to time further bank advances have been obtained to accelerate the building programme to meet the increased demand for storage space.

The bulk handling operations of the State have been divided into six divisions—Ardrossan, Wallaroo, Thevenard, Port Lincoln, Port Pirie and Port Adelaide—each of which provides a terminal port as a shipping outlet for the country silos within the division. The bulk capacity of the respective divisions for each of the three major cereals is shown in the following table.

**Bulk Handling Capacity, South Australia**  
**31 December 1968**

Division	Wheat		Barley		Oats	
	Permanent	Emergency	Permanent	Emergency	Permanent	Emergency
	'000 Bushels					
Port Adelaide .....	12,160	940	3,780	423	610	—
Ardrossan .....	4,000	—	3,200	492	—	—
Wallaroo .....	7,015	93	1,410	600	—	—
Port Pirie .....	6,802	2,533	360	87	—	—
Port Lincoln .....	12,825	3,239	2,775	119	100	—
Thevenard .....	5,755	1,200	240	—	610	—
Total .....	48,557	8,005	11,765	1,721	1,320	—

During the 1967-68 season the Co-operative received 22 million bushels of bulk wheat representing 97 per cent of total State deliveries.

A certificate showing particulars of the wheat received from a grower is forwarded by the bulk handling authority to the Australian Wheat Board, which then makes payment to the grower.

Under the system of pooling wheat, fees for the handling of wheat by the Co-operative are paid by the Wheat Board.

### Grading of Wheat

The grading of wheat for export is based on a fair average quality standard (f.a.q.). A separate standard is determined for each of the four main wheat producing States by a committee of representatives of the Wheat Board, bulk handling authorities, State Departments of Agriculture, farmers, millers and shippers. Samples of wheat from the several wheatgrowing districts are mixed in the proportion grown in the districts and the f.a.q. weight is determined from the sample. These weights are used as a guide in determining standards of wheat delivered to the Wheat Board.

Since 1957-58 in South Australia, two standards have been fixed in each season excepting the 1960-61 and 1966-67 seasons when three were fixed. Currently the two standards are known as F.A.Q. and Hard (called Semi-hard prior to December 1966), the latter being used for wheat of a better quality meeting two main

requirements—that the type of wheat is one of a number of specified hard varieties and secondly, that it is of a uniform vitreous appearance of which not more than 10 per cent is mottled or bleached. Because of hard wheat's better baking qualities, resulting in a keener overseas demand, growers of this grade receive a premium of up to 5 cents per bushel. Growers delivering inferior wheat (grain containing excessive foreign matter) or lightweight wheat receive reduced payments per bushel.

This method of setting f.a.q. standards for export marketing is peculiar to Australia, as other countries sell to fixed grades or according to sample. The standards adopted in each of the ten seasons 1958-59 to 1967-68 are shown in the next table.

**F.A.Q. Standards of Wheat, South Australia**  
(Weight in lb of a bushel of wheat)

Season	F.A.Q.	Hard	Season	F.A.Q.	Hard
1958-59 .....	63½	63½	1963-64 .....	64½	64½
1959-60 .....	63½	63	1964-65 .....	62½	63
1960-61 (a) .....	64½	64	1965-66 .....	63	62½
1961-62 .....	63½	63	1966-67 (b) .....	62	64
1962-63 .....	62½	63½	1967-68 .....	62½	63

(a) A third standard of Soft—64½ lb—was fixed in 1960-61.

(b) A third standard of No. 1 off-grade—57½ lb—was fixed in 1966-67.

### Wheat Stabilisation Plan

Wheat grown in Australia is marketed under a government stabilisation scheme which provides for the fixing of a home consumption price for each season, the pooling of the proceeds of local and overseas sales, the guarantee of a minimum price varied by changes in costs of production and the operation of a stabilisation fund into which are paid the proceeds of a tax on exports.

The first post-war Wheat Stabilisation Plan operated between 1948 and 1953. Subsequent stabilisation plans were introduced in 1954 (for seasons 1953-54 to 1957-58), 1958 (for seasons 1958-59 to 1962-63), 1963 (for seasons 1963-64 to 1967-68) and 1968 (for seasons 1968-69 to 1972-73).

Under the present plan the Commonwealth Government guaranteed to growers a price of \$1.45 per bushel in the first year of the plan, on up to 200 million bushels of wheat exported from the crop. In fixing the guaranteed price for subsequent seasons the Minister can vary the price of \$1.45 by the amount he considers appropriate by reason of increases or decreases in prices, wages or rates of charges (including rates of interest) payable in connection with (i) the carrying on of operations wholly or partly for the purposes of the production of wheat; or (ii) the transport, handling or storage of wheat. The home consumption price on or after 1 December 1968 is \$1.70 per bushel for f.a.q. bulk wheat f.o.r. at a port of export, plus one cent per bushel to cover the cost of transporting wheat from the mainland States to Tasmania.

Exported wheat is subject to a tax which is equivalent to the excess of returns from export sales over the guaranteed price, plus 5 cents. The export tax, which is paid into the stabilisation fund, is restricted to a maximum rate of 15 cents per bushel. In addition the balance in the stabilisation fund may not exceed \$80 million, any surplus being returned to the growers.

The stabilisation fund is used to make up deficiencies in respect to 200 million bushels from each crop where the average export realisation falls below the

guaranteed return. In the event of the fund being unable to meet the deficiency the Commonwealth Government is required to meet its obligations under the guarantee.

### **International Grains Agreements**

The fifth International Wheat Agreement came into effect on 1 August 1962 for a period of three years, but was extended until 31 July 1967. Under this agreement the participating importing countries undertook to buy each year from the exporting countries a stated percentage of their total commercial import requirements. Previously, participating exporting countries competed to supply at prices within a prescribed range but under a provision of this agreement it was not necessary for a maximum price declaration to be made.

In July 1967, the Kennedy Round series of negotiations conducted under the General Agreement on Tariffs and Trade resulted in an agreement among an important group of countries interested in the trade in cereals to negotiate a global grains arrangement to supersede the existing International Wheat Agreement. The terms of agreement reached were set out in a Memorandum of Agreement which, among other things, incorporated a new minimum price for wheat and a plan for international food aid.

The settlement on cereals according to the Memorandum of Agreement was translated into a formal agreement (the International Grains Arrangement 1967) at a conference in Rome in July/August 1967, at which fifty-three countries including Australia were represented. Some members of the 1962 International Wheat Agreement including the U.S.S.R. did not participate in the Conference.

The International Grains Arrangement, 1967 embraces a Wheat Trade Convention and a Food Aid Convention and came into force on 1 July 1968 for a period of three years.

The objectives of the Wheat Trade Convention are:

- to assure supplies of wheat and wheat flour to importing countries and markets for wheat and wheat flour to exporting countries at equitable and stable prices;

- to promote the expansion of the international trade in wheat and wheat flour and to secure the freest possible flow of the trade in the interests both of exporting and importing countries, and thus contribute to the development of countries, the economies of which depend on commercial sales of wheat; and

- in general to further international co-operation in connection with world wheat problems recognising the relationship of the trade in wheat to the economic stability of markets for other agricultural products.

Each member country importing wheat undertakes that the maximum possible share and not less than a specific percentage of its total commercial purchases of wheat shall be purchased from member countries. Exporting countries undertake that wheat from their countries shall be made available for purchase by importing countries in quantities sufficient to satisfy commercial requirements at prices consistent with the price ranges established.

The Arrangement covers new ground in its pricing provisions; whereas the 1962 International Wheat Agreement specified a maximum and minimum price for one wheat, the new Arrangement specifies maximum and minimum prices for thirteen wheats.

The base wheat role has been transferred from Canadian Manitoba No. 1, a wheat of limited trade, to the United States No. 2 Hard Red Winter ordinary protein, a wheat which is traded in substantial volume. By transferring the base to a U.S. wheat, the geographical basing point for freight calculations has become the U.S. loading ports in the Gulf of Mexico. The minimum price for the new base wheat, U.S. No. 2 Hard Red Winter ordinary protein has been fixed at \$U.S.1.73 a bushel f.o.b. Gulf ports. After allowing for quality differences and for the change in geographical basing points from the Great Lakes to the Gulf, the new minimum price has been calculated to be about 19 U.S. cents above the minimum in the 1962 Wheat Agreement.

At a meeting in November, 1968 the members of the Prices Review Committee reached an understanding that member countries should observe minimum price provisions for two Australian wheats not included in the original schedule of prices. The new wheats specified and the corresponding minimum prices were:

	f.o.b. Gulf Ports (U.S. dollars per bushel)
South Australian Hard .. . . . . .	1.73
Australian Prime Hard, 13 per cent protein .. . . . . .	1.78

The maximum and minimum prices, based on f.o.b. Gulf ports are given in the following statement.

	Min. price (U.S. dollars per bushel)	Max. price (U.S. dollars per bushel)
Canada		
Manitoba No. 1 .. . . . . .	1.95½	2.35½
Manitoba No. 3 .. . . . . .	1.90	2.30
United States		
Dark Northern Spring No. 1 14 per cent .. . . . . .	1.83	2.23
Hard Red Winter No. 2 (ordinary) .. . . . . .	1.73	2.13
Western White No. 1 .. . . . . .	1.68	2.08
Soft Red Winter No. 1 .. . . . . .	1.60	2.00
Argentina		
Plate .. . . . . .	1.73	2.13
Australia		
F.A.Q. .. . . . . .	1.68	2.08
European Economic Community		
Standard .. . . . . .	1.50	1.90
Sweden .. . . . . .	1.50	1.90
Greece .. . . . . .	1.50	1.90
Spain		
Fine Wheat .. . . . . .	1.60	2.00
Common Wheat .. . . . . .	1.50	1.90
Mexico		
(f.o.b. Mexican Pacific ports or at the Mexican border) .. . . . . .	1.55	1.95

The minimum price for Australian wheat f.o.b. Australian ports is \$U.S.1.68 a bushel plus freight from Gulf ports to United Kingdom less freight from United Kingdom to Australia. A Prices Review Committee will determine the prices

for ports other than the traditional ports mentioned and for wheats other than those specified. The committee will also carry out a continuous review of prices and will act to maintain market stability.

The Arrangement includes provisions enabling countries who consider their wheat/flour interests have been affected in wheat/flour price relationships to request consultations with the member countries concerned. Member countries undertake to conduct any concessional transactions in grains in such a way as to avoid harmful interference with normal patterns of production and international commercial trade. Concessional transactions are to be additional to the normal commercial transactions which could be expected.

The Food Aid Convention of the Arrangement provides for a programme of food aid amounting to 4.5 million metric tons of grain for human consumption in each of the three years of the Arrangement. The Convention commits the original signatories to the Memorandum of Agreement on cereals negotiated during the Kennedy Round to a contribution to the total programme in agreed proportions.

The principal contributions are:

	Per cent
U.S.A. . . . .	42
E.E.C. . . . .	23
Canada . . . . .	11
U.K. . . . .	5
Japan . . . . .	5
Australia . . . . .	5

Australia's commitment is 225,000 metric tons. Other nations may join the convention and contributions may be made in grain or cash.

This is the first time such a provision has been included in an international agreement on wheat and represents an acknowledgment of the responsibility of all affluent countries to aid developing countries.

### Prices

The table below shows the trend in export and domestic prices of Australian wheat for the years 1958-59 to 1967-68.

**Export and Domestic Prices of Australian Wheat**

Year	Export Price per Bushel (a)	Home Price per Bushel
	\$	\$
1958-59 .....	1.38	1.47
1959-60 .....	1.33	1.50
1960-61 .....	1.35	1.53
1961-62 .....	1.44	1.58
1962-63 .....	1.44	1.59
1963-64 .....	1.53	1.46
1964-65 .....	1.43	1.47
1965-66 .....	1.43	1.53
1966-67 .....	1.54	1.57
1967-68 .....	1.43	1.66

(a) Average of the twelve monthly prices, year ended July.

The export prices shown in the table are the basic selling prices for f.a.q. bulk wheat, f.o.b. The home prices are those set by the Wheat Board for bulk wheat (f.o.r.) sold to millers for grinding into flour for consumption in Australia. The





*Adelaide Advertiser*

A view of the Torrens Lake looking toward the University foot-bridge and the Adelaide Teachers College building.

The Bonython Fountain on North Terrace, and a Wing of the State Library. The main sections of the State Library are housed in an adjoining new building.

*Adelaide City Council*

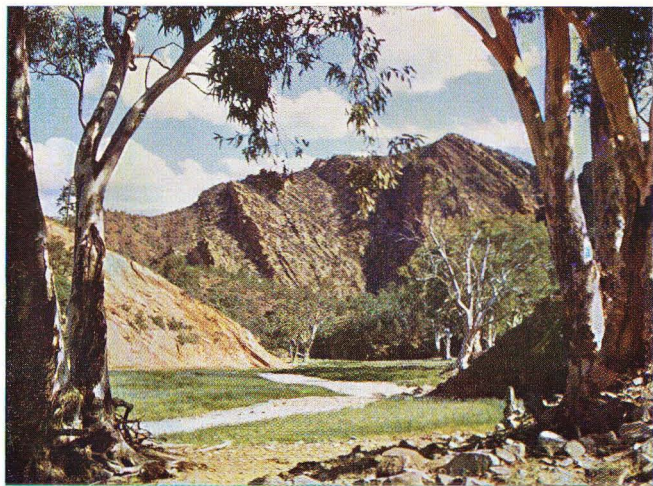






*Keith P. Phillips*  
Creek crossing, Parachilna Gorge.

SCENES IN THE  
FLINDERS RANGES



*S.A. Govt. Tourist Bureau*  
Brachina Gorge.

Warren Gorge, near Quorn.  
*S.A. Govt. Tourist Bureau*



prices charged by the Board for wheat for stock feed in Australia are the same as those charged for wheat for human consumption. Before 1953-54 differential rates were charged in some years.

## BARLEY

### Production

South Australia is by far the most important barley producing State and in 1966-67 the acreage sown represented more than 44 per cent of the Australian total and yielded 39 per cent of the grain produced. Of the area sown in South Australia, 86.6 per cent was two-row barley for grain, reflecting the suitability of certain areas of the State for the production of high quality malting barley. For malting purposes a plump mellow grain with fine skin coverings is required, and this can only be obtained when the ripening period is somewhat prolonged by cool conditions, without much high temperature or drying winds.

Although formerly a crop of comparatively minor importance, barley growing increased greatly after the 1939-45 War. For the three consecutive harvests, 1956-57 to 1958-59, there were more bushels of barley than bushels of wheat produced, but actual weight was less since a bushel of barley weighs only 50 lb. compared with 60 lb. for a bushel of wheat.

### Area and Production of Barley for Grain, Statistical Divisions, South Australia

Season	Statistical Division						Total
	Central	Lower North	Upper North	South Eastern	Western (a)	Murray Mallee	
AREA ('000 Acres)							
1958-59 ..	412	268	28	28	282	314	1,332
1959-60 ..	410	250	25	38	262	305	1,290
1960-61 ..	466	292	32	51	322	393	1,556
1961-62 ..	407	221	17	37	266	323	1,271
1962-63 ..	357	171	14	25	213	273	1,053
1963-64 ..	368	186	13	26	222	308	1,123
1964-65 ..	364	173	11	27	210	310	1,095
1965-66 ..	365	173	11	24	205	320	1,098
1966-67 ..	363	177	10	24	194	338	1,107
1967-68 ..	378	194	12	29	225	319	1,157
PRODUCTION ('000 Bushels)							
1958-59 ..	12,929	8,685	843	761	7,634	6,813	37,665
1959-60 ..	4,575	1,849	186	512	2,168	2,567	11,857
1960-61 ..	14,216	9,621	859	881	8,542	8,114	42,233
1961-62 ..	7,177	4,154	206	668	3,916	5,172	21,293
1962-63 ..	6,682	2,827	153	708	3,600	4,035	18,005
1963-64 ..	9,698	4,984	266	493	4,333	4,562	24,336
1964-65 ..	11,326	4,647	229	623	4,562	5,545	26,932
1965-66 ..	7,081	2,847	106	501	3,838	4,141	18,514
1966-67 ..	10,012	4,245	176	636	4,785	3,843	23,698
1967-68 ..	4,616	1,906	103	275	3,491	1,989	12,380

(a) Includes small areas Outside of Counties.

Unlike wheat, barley growing has nearly always been confined to very suitable districts resulting in high and remarkably stable yields. During the period 1901-02 to 1935-36 the highest yield was 20.00 bushels per acre and excepting for the severe drought of 1914-15 the lowest was 13.67 bushels per acre. The subsequent increase in barley growing in districts subject to greater climatic

variations, *e.g.* Murray Mallee and Eyre Peninsula, has been responsible for greater average yield fluctuations since 1936-37 but over all the average yield has increased, the record yield being 28.27 bushels per acre in 1958-59. Poor seasonal conditions in 1967-68 resulted in an average yield of 10.70 bushels per acre.

Yorke Peninsula, reputed to be the best barley growing area in Australia, has been the major producing district in South Australia since the 1914-18 War. In the 1967-68 season this area contributed just over 40 per cent of the total crop. It has an ideal climate for barley growing as the moisture-laden breezes off the gulfs on either side retard ripening.

Recently, barley growing has become prominent on the red mallee soils of the moister coastal regions of Eyre Peninsula and the lighter soils of the southern Murray Mallee region.

### Varieties

The most widely grown barley variety is Prior, which for the three seasons ended 1967-68 averaged about 60 per cent of the total area sown. This variety, thought to be developed from English Archer malting barley, was first grown by Mr S. Prior of Brighton, South Australia. Prior is capable of producing grain of very high malting quality under favourable conditions but it suffers from two major deficiencies—it is susceptible to neck break and shattering if strong winds are experienced when the crop is nearly ripe and it is not well adapted to conditions of high soil fertility.

A variety, known as Noyep, is similar to Prior but is earlier maturing and is suitable to areas where a sudden cut-off in spring rainfall is experienced. These characteristics have resulted in a significant switch to this variety from one per cent in 1961-62 to 26 per cent of total area sown in 1967-68.

Other varieties of less importance are Maltworthy, which is more resistant to wind damage than Prior but of inferior commercial malting quality, and Research, much later maturing than Prior, which is recommended only for the lower South East.

A new malting variety, Clipper, has been released in South Australia and seed crops were grown by a number of growers in 1968. The variety has greater straw strength, grain retention ability and is adapted to conditions of high soil fertility.

### Research

Because of the inherent similarities, the barley industry has in many instances benefited from the technological advances achieved by the wheat industry, *viz* the use of superphosphate and the inclusion of pastures in rotation, but certain problems peculiar to barley have necessitated the undertaking of extensive research.

The deficiencies of the major variety Prior have been the subject of intensive investigation and research work by the Department of Agriculture. To overcome weaknesses in the straw of Prior which is responsible for the heavy loss of grain when crops are almost ripe, two methods known as windrowing and rolling have been devised. The aim of both methods is to lay the crop down out of the wind at a time when grain formation is completed, but before the straw is dry enough to be brittle.

Another problem causing concern is the unfavourable effect increased soil fertility is having on quality. This has been most noticeable on Yorke Peninsula

where the increased use of clover pastures and heavier dressings of super-phosphate have greatly increased soil fertility. Excess nitrogen induces rank growth which is detrimental to grain quality.

In experiments at Turretfield and Urania the effects of various fertility levels on different barley varieties are being observed to discover if any variety can approach the ideal of combining high yield with high quality on clover soils.

At Turretfield and Arthurton research is continuing on the time and rate of sowing of the Clipper variety.

### Marketing

The marketing of barley is under the control of the Australian Barley Board which operates in South Australia and Victoria and provides an orderly marketing system for barley grown in these States.

In the first season of South Australian and Victorian joint marketing in 1942-43 the Board received 3,810,000 bushels. Since then, barley receivals have increased considerably and in the 1960-61 season the Board received a record total of 44,624,000 bushels. Receivals by the Board in 1966-67 were 22,043,000 bushels.

**Australian Barley Board Receivals, South Australia<sup>(a)</sup>**

Season	Two-Row			Six-Row		Total
	Malting	Milling	Feed	Malting	Feed	
	'000 Bushels					
1959-60 .....	2,563	1,940	3,233	1	59	7,796
1960-61 .....	8,966	15,278	12,880	79	1,177	38,380
1961-62 .....	996	4,162	11,860	4	204	17,226
1962-63 .....	4,210	6,318	3,328	3	88	13,947
1963-64 .....	5,621	8,036	6,343	12	348	20,360
1964-65 .....	6,947	10,211	5,166	30	269	22,623
1965-66 .....	1,151	2,923	9,115	8	100	13,297
1966-67 .....	5,122	8,974	4,397	34	194	18,721

(a) Includes weight of bags but some bulk handling since 1963-64.

The Board has been able to dispose of each season's receivals with little difficulty. Major export markets are Europe, the Middle East, Japan and the United Kingdom.

Following recommendations submitted in a report by an investigating committee in October 1963 a bulk handling scheme for barley was introduced. In 1963-64, the first full year of its operation, bulk barley was received direct from growers at terminal ports in South Australia, and a total of 1,172,113 bushels was handled; 11,023,937 bushels were handled in 1966-67. In 1964-65 bulk barley was received for the first time at other than terminal silos.

For marketing purposes all barley is classified on sample before delivery. Classification is firstly by row variety and secondly by quality—Malting (No. 1 and No. 2), Milling (No. 3) and Feed (No. 4 and No. 5) for two-row and Malting and Feed (No. 4 and No. 5) for six-row.

The prices paid to growers in the 1966-67 season ranged from \$1.252 per bushel for two-row bagged barley of Malting No. 1 quality to \$0.872 per bushel for six-row bagged barley of No. 5 (feed) quality. Growers who delivered barley in bulk received 5.75 cents less per bushel.

The payments to the growers are made in a series of four advances, the first of 90 cents per bushel for first quality bagged barley and 85 cents for bulk barley being made on delivery.

In 1957 agreement between brewers, maltsters and the Board was reached on a formula for fixing the price of malting barley. Prices of barley for distilling and pearling purposes are determined after the malting price has been fixed and prices for feed are determined monthly.

The home consumption prices determined by the Board for barley for season 1966-67 and preceding years are shown below.

#### Price per Bushel of Barley for Home Consumption

Season	Malting No. 1 per Bush	Distilling and Pearling No. 3 Grade per Bush	Feed No. 4 Grade per Bush	Feed No. 5 Grade per Bush
			\$	
1959-60—Bagged.....	1.32	1.24	1.10	1.05
1960-61—Bagged.....	1.36	1.28	1.00	0.95
1961-62—Bagged.....	1.39	1.32	1.00	0.95
1962-63—Bagged.....	1.41	1.33	1.10	1.05
1963-64—Bagged.....	1.35	1.28	1.10	1.05
1964-65—Bagged.....	1.37	1.29	1.10	1.05
Bulk .....	1.28	1.21	1.03	—
1965-66—Bagged.....	1.44	1.36	1.18	1.13
Bulk .....	1.34	1.26	1.10	1.05
1966-67—Bagged.....	1.51	1.43	1.25	1.20
Bulk .....	1.41	1.33	1.17	1.12

#### OATS

The following table shows the area of oats sown for grain, for hay and for forage and the production of grain and hay in recent years.

#### Oats, South Australia

Season	Area Sown for			Total Area	Production	
	Grain	Hay	Forage		Grain	Hay
	'000 Acres				'000 Bushels	'000 Tons
1960-61 .....	512	153	242	907	11,478	243
1961-62 .....	323	83	224	630	4,391	102
1962-63 .....	416	116	307	839	5,770	147
1963-64 .....	500	141	315	956	9,149	185
1964-65 .....	444	110	397	951	8,977	157
1965-66 .....	455	112	404	971	5,622	118
1966-67 .....	509	135	314	958	10,276	183
1967-68 .....	525	158	287	969	3,299	114

The milling qualities of most oats grown in South Australia do not meet the requirements of overseas markets and only a small proportion of the harvest is exported; most of the crop is used as animal fodder. As is the case with barley, some of the area sown for grain and hay is grazed until June or July then closed to sheep to allow re-growth to a crop. Part of the area sown for forage is left to stand until it is used as dry grazing in autumn, when other



fodder is not plentiful. In 1967-68, 86 per cent of the total area of oats was sown in three varieties—Avon 495,000 acres, Kent 168,000 acres and Kherson 169,000 acres. Production of oats for grain was down to 3.3 million bushels in 1967-68.

### RYE

Rye is a minor crop, but it has been used to control sand drift and to help stabilise the light soils of the Murray Mallee in recent years. Because the sands are deficient in two main nutrients (nitrogen and phosphorus), a mixed super-phosphate-ammonia fertiliser is sown with the rye seed early in the season. The rapid early growth of the rye while the ground is still warm and before the strong winds of winter cause sandblast is at present the most effective form of control of drifting sand.

Rye provides early greenfeed and a few bushels of grain per acre is produced on some farms. Although most grain is used for stock feed, varying quantities are exported in different years for milling. Rye hay is poor quality material and only a few hundred tons are produced each year.

In 1967-68, 58,000 acres of rye for grain yielded 197,000 bushels. Record production was 446,000 bushels from 57,000 acres in 1958-59.

### HAY

The quantity of hay produced varies considerably from year to year according to seasonal conditions and the need to replace stocks used during the previous season. The main crops cut for hay in recent years have been oats, clover and meadow hay which together account for more than half of all hay produced. The quantity of lucerne hay produced has increased from a few thousand tons twenty years ago to 122,000 tons in 1966-67, but dropped to 97,000 tons in 1967-68.

#### Hay: Area and Production, South Australia

Season	Oaten	Wheaten	Lucerne	Barley and Rye	Clover and Grass	Total
AREA ('000 Acres)						
1960-61 .....	153	52	36	15	137	393
1961-62 .....	83	34	24	9	59	209
1962-63 .....	116	44	30	15	82	287
1963-64 .....	141	41	38	15	123	358
1964-65 .....	110	40	43	11	110	314
1965-66 .....	112	46	38	15	88	299
1966-67 .....	135	48	67	19	213	482
1967-68 .....	158	81	49	42	100	429
PRODUCTION ('000 Tons)						
1960-61 .....	243	88	62	22	201	616
1961-62 .....	102	46	44	9	85	286
1962-63 .....	147	55	55	16	134	406
1963-64 .....	185	57	65	18	163	488
1964-65 .....	157	60	81	13	176	487
1965-66 .....	118	54	66	14	116	368
1966-67 .....	183	65	122	21	339	729
1967-68 .....	114	68	97	30	110	418

Between 50,000 and 100,000 tons of silage are produced in most years and in certain areas this is an important supplementary stock food. In 1967-68 production was only 22,000 tons.

## VEGETABLES

The market garden industry in South Australia is characterised by a large number of growers, most of whom cultivate a few acres only. Many of the gardens form part of a larger holding. Much of the production of the industry comes from properties within easy reach of the Adelaide market.

Of the total area of 17,000 acres devoted to market gardens, districts adjacent to Adelaide account for 12,000 acres producing all types of vegetables, including large quantities of celery and early tomatoes for export. An area of some 2,000 acres in Upper North Division (mainly on the coastal plains near Port Pirie) is used for the production of peas and early tomatoes for Adelaide and for export to the Melbourne market. Nearly 3,000 acres along the River Murray are devoted to production of peas, pumpkins and melons for the Adelaide market, tomatoes for local markets and small areas of most other vegetables.

The following table shows the area and production of the principal vegetables for human consumption in South Australia in 1966-67 and 1967-68.

Vegetables for Human Consumption, South Australia

Vegetable	Area		Unit of Quantity	Production	
	1966-67	1967-68		1966-67	1967-68
	Acres				
Beans .....	239	225	bushel	49,068	53,628
Cabbages .....	405	388	dozen	197,104	207,129
Carrots .....	368	457	ton	5,224	6,387
Cauliflowers .....	633	621	dozen	276,474	271,490
Celery .....	267	266	crate	204,905	196,483
Lettuce .....	498	519	case	284,997	297,537
Melons .....	423	393	ton	2,441	2,252
Onions .....	1,631	1,682	ton	17,933	16,635
Peas .....	4,035	3,471	bushel	327,088	251,124
Potatoes .....	5,948	6,527	ton	60,271	63,331
Pumpkins .....	764	682	ton	4,946	4,191
Tomatoes .....	1,408	1,354	half-case	1,988,844	1,890,255
Turnips .....	222	250	ton	1,730	1,744
Other .....	586	630	..	..	..
Total .....	17,426	17,465	..	..	..

The bulk of the potato production comes from the central and southern Adelaide hills and from the Mount Gambier area. The average yield has risen progressively from 5.5 tons per acre in 1947-48 to a record of 10.1 tons per acre in 1966-67. In 1967-68 the average yield was 9.7 tons per acre. This improvement is largely due to better quality seed, improved fertilisers and advances in pest and disease control.

The South Australian Potato Board was constituted under authority of the Potato Marketing Act, 1948, to control the sale and delivery of potatoes by growers. It fixes the maximum and minimum prices and the conditions under which potatoes may be sold. Members of the Board are representatives of retail sellers, merchants and growers of potatoes.

Most green peas are grown in the Port Pirie-Mambray Creek area, in the hills to the south of Adelaide, and in the Upper Murray irrigation areas. The crop from the Port Pirie area has a ready market in Melbourne, the supplies being refrigerated and sent by express rail to prevent deterioration of quality.



Celery produced in South Australia meets a steady demand from interstate markets and production has been about 200,000 crates annually for the past few years. Nearly all of the celery is grown on the Adelaide plains adjacent to the city.

The Adelaide plains produce most of the South Australian tomatoes, which are nearly all grown in glass houses. Significant quantities, mostly for canning and juice production in local factories, are now grown in the Upper Murray irrigation areas. In recent years high yields have resulted from the introduction of new varieties.

### GRAPES

Approximately 42 per cent of Australia's vineyard area is located in South Australia where the bulk of the grapes grown are used for winemaking. In 1967-68 South Australia produced 30.1 million gallons of wine and 8,312 tons of dried vine fruit representing 70 per cent and 16 per cent respectively of total Australian production. The following table shows the area, production and utilisation of grapes for the seasons 1958-59 to 1967-68.

**Area, Production and Utilisation of Grapes, South Australia**

Season	Area of Vines	Total Grape Production (Fresh)	Wine Production (a)	Dried Fruit Production		
				Currants	Sultanas	Raisins
	Acres	Tons	'000 Gallons		Cwt	
1958-59 .....	56,749	194,351	25,132	90,620	221,400	25,060
1959-60 .....	56,853	157,275	21,576	56,880	128,680	55,160
1960-61 .....	56,897	178,290	25,061	90,860	115,900	19,120
1961-62 .....	57,836	220,002	30,831	54,840	189,020	24,460
1962-63 .....	58,266	164,808	20,785	52,140	187,420	32,720
1963-64 .....	58,679	211,719	27,102	90,660	244,820	18,360
1964-65 .....	58,857	234,297	28,022	100,875	264,054	62,440
1965-66 .....	58,730	183,802	23,884	63,063	193,794	44,498
1966-67 .....	57,080	225,416	29,324	75,452	248,288	22,597
1967-68 .....	58,129	201,228	30,130	62,243	91,949	12,051

(a) Excludes grape spirit added.

Grapes are grown commercially in South Australia in non-irrigated areas of 19 to 26-inch rainfall, and in much drier areas (frequently with less than a 10-inch rainfall) where irrigation is available. The expansion of grape growing in the foothills and plains near Adelaide was most pronounced between 1845 and 1860. Some vineyards still remain in the suburbs, but they are gradually disappearing. Main plantings are of wine grapes but some table grapes are also grown.

In 1888 the Chaffey brothers founded the irrigation settlements of Mildura (Victoria) and Renmark. After the 1914-18 War returned soldiers were settled on these irrigated areas and this provided the South Australian vine industry with one of its most significant periods of expansion; the area under vines in the State rose from 31,000 acres in 1918-19 to over 50,000 acres in 1924-25. These settlements now are by far the most important grape growing areas in the State and in 1967-68 accounted for 40 per cent of the area under vines and 70 per cent of grapes produced.

The following table gives particulars of area of vines and production of grapes in the main statistical divisions in 1967-68.

**Area and Production of Vines, Statistical Divisions, South Australia  
1967-68**

Statistical Division	Area			Production of Fresh Grapes			
	Wine	Table	Drying	Wine	Table	Drying	Total
	Acres			Tons			
Central .....	26,897	21	491	39,559	36	818	40,413
Lower North ..	2,957	3	247	3,084	—	226	3,310
South Eastern ..	801	—	—	1,017	—	—	1,017
Murray Mallee.	19,894	212	6,603	126,921	995	28,572	156,488
Remainder of divisions ...	1	2	—	—	—	—	—
<b>Total State</b>	<b>50,550</b>	<b>238</b>	<b>7,341</b>	<b>170,581</b>	<b>1,031</b>	<b>29,616</b>	<b>201,228</b>

**Grape Growing Districts**

The grape-growing districts of South Australia are subject to substantial variety in geographical location, climatic variations and soil conditions and can be divided into six easily recognisable regions (See map 16 page 391) ranging from the Clare-Watervale district in the north to the southern limit of the grape growing area at Coonawarra in the south-east of the State and bounded by the warm irrigated areas of the Murray to the east.

Supplementary irrigation is to be found in some portions of the so-called non-irrigated grape growing districts, *e.g.* Langhorne Creek, but all the vineyards in these areas are mainly dependent on winter rainfall stored in the sub-soil by careful dry-farming methods to be used during the summer growing season of the vine—the non-irrigated districts are less uniform than the Upper Murray.

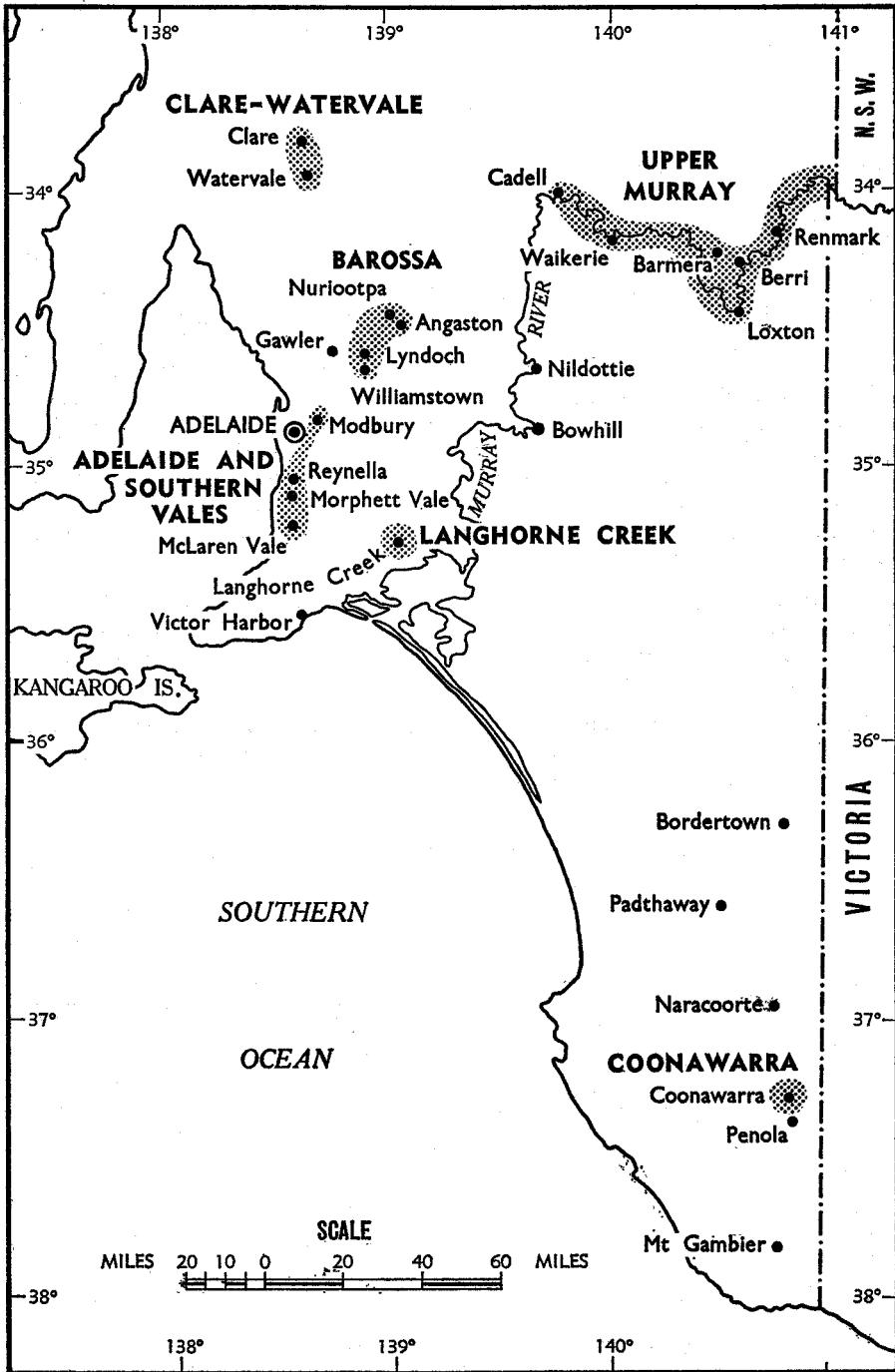
**Area of Vineyards, South Australia**

Particulars	1965-66		1966-67		1967-68	
	Bearing	Not Bearing	Bearing	Not Bearing	Bearing	Not Bearing
	Acres					
<b>Vines:</b>						
Wine grapes .....	40,713	4,714	41,496	3,885	46,231	4,319
Table grapes .....	258	41	199	24	225	13
Drying grapes ....	12,563	442	11,037	439	6,936	405

District average yields in the irrigated areas are seven to eight tons per acre although individual vineyard yields of fifteen, and even twenty tons per acre are not uncommon. In the non-irrigated districts the average is one and a half to two tons per acre with individual vineyards producing eight or ten tons in favourable years. About half of the State's wine-grapes are sold by private treaty to proprietary wine-makers at prices, according to variety, which are determined by the Government Prices Commissioner.

About one-third of the State's wine-grape crop is received by the co-operative wineries. Nearly all of this is grown by members who receive a down payment on each ton, followed by further payments over a period of up to five years according to realisation made on the product. Most of the wine, brandy and spirit made by co-operatives is sold in bulk to proprietary wineries.

# PORTION OF SOUTH AUSTRALIA GRAPE GROWING DISTRICTS



MAP 16

## Production of Grapes, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Tons					
Grapes (a):					
For wine .....	148,828	158,340	129,855	163,780	170,581
For table .....	969	1,167	1,210	1,027	1,031
For drying .....	61,922	74,790	52,737	60,609	29,616

(a) Growers' intentions as stated at 31 March.

## Grape Varieties

The most common grape varieties in South Australia are those which can be used for dried fruit as well as wine or spirit production. About 60,000 tons of grapes, freshweight, or a little more than a quarter of the State's total crop is dried to produce sultanas, currants and raisins. However in 1967-68 the tonnage used for drying was down to 31,000 tons. Production of sultanas is greatest with crops varying around 50,000 tons per year, representing about a quarter of all the grapes grown in the State. This is produced on slightly less than 9,000 acres of bearing sultanas; in 1968 there was a total of 9,029 acres of sultanas, but this included 240 acres of young vines not yet bearing. This is slightly less than the 10,469 acres of the main wine-grape variety, Grenache, but since three-quarters of the Grenache is grown in non-irrigated districts where yields are lower, the total crop is only half that of the sultana.

Another leading variety is Muscat Gordo Blanco, or more commonly Gordo in the River districts and often called Muscatel when sold as a table grape. Although known as a drying variety, more than 90 per cent of it is crushed for wine or spirit production.

Riesling and Cabernet Sauvignon (3,908 and 1,122 acres respectively in 1968) while not leading in acreage, are most important in white and red table wine production because of their superior quality.

## Principal Varieties of Vines, South Australia

Variety	December 1957 (a)	December 1965 (a)	March 1967	March 1968
Acres				
Sultana .....	10,009	9,320	9,160	9,029
Muscat Gordo Blanco .....	6,442	5,913	5,461	5,468
Currants .....	6,207	3,992	3,563	3,567
Grenache .....	9,462	10,039	9,965	10,469
Shiraz .....	5,843	5,586	5,661	5,918
Doradillo .....	4,605	4,624	4,554	4,606
Pedro Ximinez .....	3,398	4,573	4,331	6,534 (b)
Pedro False .....	1,627	3,164	3,793	3,908
Semillon .....				
Rhine Riesling .....				
Clare Riesling .....				
Mataro .....	3,901	3,221	2,757	2,733
Other .....	6,229	7,784	7,835	5,893
Total .....	57,723	58,216	57,080	58,125

(a) Figures compiled by the Phylloxera Board of South Australia.

(b) Includes Palomino previously shown in Other.

Approximately one thousand tons, less than one per cent of the total crop, are sold each year as table grapes, the majority of grapes for this purpose being grown in home gardens.

A special article on the wine industry in South Australia was included on pages 375-96 of the *South Australian Year Book* 1968.

### ORCHARD FRUIT

A large variety of fruit crops is grown in South Australia. The main types are oranges, peaches and apricots (predominantly grown in the irrigation settlements of the Upper Murray) and apples (nearly all grown in the Adelaide Hills). The following table relating to 1967-68 production shows the concentration of fruitgrowing in Central and Murray Mallee Divisions.

**Production of Principal Fruit Crops, Statistical Divisions, South Australia  
1967-68**

Fruit	Statistical Division			Other Areas	State
	Central	Lower North	Murray Mallee		
Citrus fruit:	'000 Bushels				
Oranges;					
Navel .....	96.2	0.9	847.7	0.3	945.2
Other.....	50.0	0.7	1,246.9	0.1	1,297.7
Other citrus fruit	26.0	0.3	318.3	0.2	344.8
Non-citrus fruit:					
Apples.....	1,366.8	0.9	9.2	1.4	1,378.3
Apricots .....	94.7	1.0	586.6	1.1	683.4
Peaches .....	81.1	1.9	1,155.8	3.7	1,242.6
Pears .....	276.0	0.9	332.2	0.6	609.7
Plums and Prunes	65.1	4.7	10.0	0.3	80.0

Citrus growing is concentrated in the irrigation settlements of the Upper Murray where 90 per cent of the total crop is produced. The industry has shown great expansion in the last decade; production first exceeded 2,500,000 bushels in 1962-63 while in 1964-65 a record level of over 3,400,000 bushels was achieved. This increase was due largely to the extensive orange tree plantings in newly-developed irrigation schemes, including those of Sunlands and Golden Heights near Waikerie. Another factor has been a change from furrow to overhead sprinkler irrigation for citrus trees planted since 1950. This change, coupled with advances in irrigation timing techniques, has raised the potential yield of recent plantings. However, high salinity in irrigated water over the last year has led to the introduction of some under-tree sprinklers. Over 20 per cent of the State's orange production is exported, this being about 60 per cent of total orange exports from Australia.

The following table of citrus trees of bearing age and production during the past five seasons shows the predominance of navel and valencia oranges. Other types of oranges, lemons and limes, mandarins, grapefruit, etc., together represent only 10 to 15 per cent of total citrus production.

**Citrus Fruits: Trees and Production, South Australia**

Season	Oranges			Lemons and Limes	Mandarins	Grapefruit and Other Citrus	Total Citrus
	Navel	Valencia	Other				
TREES OF BEARING AGE ('000)							
1963-64 .....	332	356	12	19	17	29	765
1964-65 .....	348	387	10	19	21	28	813
1965-66 .....	361	407	10	21	26	29	854
1966-67 .....	397	451	10	23	27	30	937
1967-68 .....	419	499	8	26	34	32	1,018
PRODUCTION ('000 Bushels)							
1963-64 .....	1,032	1,018	34	36	41	159	2,320
1964-65 .....	1,428	1,726	34	42	62	145	3,437
1965-66 .....	1,344	1,252	37	43	49	186	2,911
1966-67 .....	1,298	1,706	31	55	70	148	3,307
1967-68 .....	945	1,272	26	51	79	215	2,588

Apple growing is the principal non-citrus fruit industry. Although the area of apple orchards has decreased by some 50 per cent over the last forty years, production has gradually increased, partly because of the removal of lower yielding orchards and partly due to the general adoption of supplementary irrigation and lighter pruning practices. The yield per bearing acre, which averaged 197 bushels for the ten seasons ended 1961-62, rose to 337 bushels in 1964-65, the season of record production. About 20 to 25 per cent of the crop is exported each year either as fresh, pulped or preserved apples.

Pears are grown in the Adelaide Hills, in the Barossa Valley and on the Murray irrigation settlements. The yield from the 1967-68 harvest was a record 610,000 bushels from 1,585 acres. Pear acreage reached a peak in 1922, then declined gradually until 1952. An expansion of the canned fruit industry has caused a subsequent increase in plantings along the River Murray.

The stone fruits industry has become important following development of the irrigation schemes. Production of peaches has shown the greatest increase: the 1951-52 yield of 157,000 bushels from 2,064 acres was typical for the crop until that time, but by 1966-67 the yield was a record 1,427,000 bushels from 4,754 acres. In the same period production of apricots rose from 507,000 to 1,307,000 bushels although in 1967-68 it was only 683,000 bushels. South Australia is the major apricot-producing State, with the greater part of the crop being dried and much of the remainder being canned.

Cherries, plums and prunes, and almonds are the most important of the remaining crops.

**Non-Citrus Orchard Fruit: Trees and Production, South Australia**

Season	Apples	Apricots	Cherries	Peaches	Pears	Plums and Prunes
TREES OF BEARING AGE ('000)						
1963-64 .....	544	361	49	367	172	95
1964-65 .....	550	366	49	385	174	92
1965-66 .....	536	365	50	395	173	85
1966-67 .....	529	382	50	397	166	78
1967-68 .....	526	380	50	390	167	75
PRODUCTION ('000 Bushels)						
1963-64 .....	1,341	929	54	979	524	91
1964-65 .....	1,625	1,170	42	1,173	574	92
1965-66 .....	1,308	827	54	1,303	509	85
1966-67 .....	1,544	1,307	41	1,427	530	105
1967-68 .....	1,378	683	53	1,243	610	80

South Australia accounts for almost the entire Australian production of dried apricots, peaches, pears, nectarines and figs—mostly in the Upper Murray areas and the Barossa Valley. A small proportion of the Australian production of dried prunes is produced in the Barossa Valley and in the Noarlunga district.

Production in 1967-68 included 28,122 cwt of dried apricots, 12,737 cwt of dried peaches and 7,507 cwt of dried pears.

The Dried Fruits Board, constituted under the Dried Fruits Act, 1934-1966, regulates marketing in South Australia by determining a quota for home sale of dried fruits in each year. By advertising or other means, the Board may encourage the consumption of dried fruits.

### OTHER CROPS

Other crops cultivated in South Australia include field peas, nursery products, cut flowers, pasture seeds, vegetable seeds, chicory and linseed.

In 1967-68, 17,000 acres of field peas were grown for grain yielding 61,000 bushels, virtually all of this area being located in the cereal growing districts north of Adelaide. Field peas are grown mainly as a livestock fodder, or for processing into split peas.

Most of the lucerne and other pasture seeds are grown in the cooler, moist regions, particularly in the South East. During the 1967-68 season the South East produced approximately 51 per cent of the 2,608,293 lb of lucerne seed produced in the State.

A considerable portion of the area devoted to nurseries is found in the vicinity of Adelaide. In addition there are several fruit tree nurseries in the horticultural districts of the River Murray.

### PLANTING AND HARVESTING OF CROPS

The main crops of South Australia are normally planted and harvested during periods as listed below.

#### Usual Months of Planting and Harvesting, South Australia

Crop	Planting	Harvesting
<b>Cereals:</b>		
Wheat .....	April-June	November-January
Barley .....	May-July	November-January
Oats .....	April-June	November-January
<b>Fruit:</b>		
Grapes .....	..	February-May
Citrus .....	..	May-February
Apples .....	..	January-April
Apricots .....	..	December-January
Peaches .....	..	December-March
Pears .....	..	January-April
<b>Vegetables:</b>		
Potatoes .....	July-January	November-June
Tomatoes ;		
Field .....	September-February	January-June
Glasshouse .....	March-June	July-January

.. Not applicable.

## VALUE AND PRICES OF CROPS

The estimated gross value of agricultural production for South Australia in the 1966-67 season was \$184,090,000. Gross value is defined as the value placed on recorded production at wholesale prices realised in principal markets. Where products are absorbed at a local point or become raw material for a secondary industry the value in each case is presumed to be the value at the principal market. In the following table gross values of principal crops for the seasons 1961-62 to 1966-67 are shown.

Gross Value of Principal Crops, South Australia

Crop	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67
	\$'000					
<b>Cereals:</b>						
Wheat .....	51,515	56,285	77,660	74,550	59,559	79,612
Barley .....	22,952	19,152	26,399	30,135	20,234	26,912
Oats .....	2,627	3,939	5,219	5,044	3,346	5,914
Rye .....	185	170	200	330	206	307
Grass seeds .....	787	1,239	1,956	2,637	2,089	2,566
Hay .....	4,427	7,034	8,414	8,336	6,923	12,089
Green fodder .....	1,402	2,204	2,187	3,015	2,692	2,540
Field peas .....	522	709	890	892	496	695
<b>Orchard and berry fruit:</b>						
Citrus .....	5,527	5,445	5,578	7,182	6,713	7,655
Apples .....	3,182	3,944	3,088	3,859	3,744	3,811
Apricots .....	2,184	2,415	2,749	3,181	2,293	3,439
Peaches .....	1,556	1,737	1,812	2,490	2,579	2,576
Other .....	2,476	2,446	2,773	3,154	3,253	3,371
<b>Vine fruit:</b>						
Wine grapes ....	8,376	5,666	7,888	8,877	7,656	10,019
Table grapes ....	151	179	178	189	229	199
Dried currants, raisins, etc....	3,599	4,024	5,501	7,269	4,944	5,710
<b>Vegetables:</b>						
Potatoes .....	4,095	2,389	2,340	6,048	4,692	3,138
Green peas .....	770	864	843	736	647	772
Other .....	6,483	7,297	8,654	8,894	10,021	11,069
<b>Other crops .....</b>	<b>1,206</b>	<b>1,278</b>	<b>1,306</b>	<b>1,314</b>	<b>1,701</b>	<b>1,697</b>
<b>Total .....</b>	<b>124,022</b>	<b>128,417</b>	<b>165,634</b>	<b>178,132</b>	<b>144,017</b>	<b>184,090</b>

Market prices of principal crops grown in South Australia for years 1962-63 to 1966-67 are set out in the following table. Wheat prices, which were as low as 23c per bushel in 1930-31, have shown little fluctuation in recent years, and have not been below \$1.30 per bushel since the 1948-49 season. Prices of other cereals, however, are subject to marked variations from year to year. For example, since 1947-48, average barley prices per bushel have been as high as \$1.68 and as low as 84c, while in the same period oats prices have been as high as \$1.17 and as low as 42c per bushel.



## Prices of Agricultural Products, South Australia

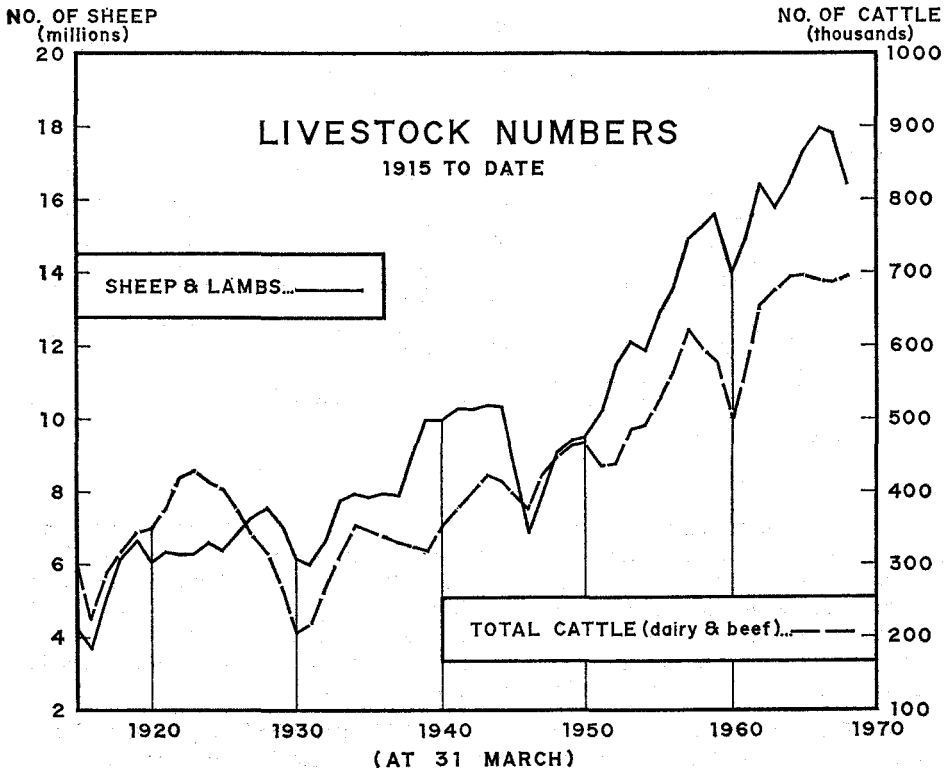
Crop	Unit	1962-63	1963-64	1964-65	1965-66	1966-67
		\$	\$	\$	\$	\$
<b>Cereals:</b>						
Wheat (a);						
Bulk .....	bushel	1.468	1.433	1.412	1.501	1.488
Bagged .....	bushel	1.547	1.511	1.491	1.597	1.579
Barley (a) .....	bushel	1.110	1.114	1.153	1.176	1.192
Oats .....	bushel	0.775	0.611	0.668	0.778	0.673
Rye .....	bushel	1.225	1.349	1.295	1.16'	1.327
<b>Vegetables:</b>						
Potatoes (a) .....	ton	45.08	45.91	125.18	83.29	52.27
Onions .....	ton	66.89	100.98	90.33	119.67	105.20
Tomatoes;						
Glasshouse .....	½ case	3.25	4.10	3.56	3.82	3.57
Other .....	½ case	1.93	1.66	2.27	2.69	1.82
<b>Fruit:</b>						
Apples .....	bushel	2.91	2.34	2.40	3.19	3.38
Apricots .....	bushel	3.57	3.98	5.05	4.61	4.84
Peaches .....	bushel	4.77	5.22	4.92	4.34	4.89
Pears .....	bushel	3.38	2.81	2.83	3.36	3.32
Oranges;						
Navel (a) .....	bushel	2.12	2.62	2.35	2.47	2.55
Other (a) .....	bushel	1.90	2.35	1.89	2.27	2.14
Grapes;						
Table .....	ton	166.45	183.20	162.00	189.60	193.92
Wine (b) .....	ton	48.81	53.00	56.07	58.96	60.61

(a) Average price realised.

(b) Weighted average price at winery.

## PASTORAL AND DAIRYING

Pastoral activities, with sheep grazing predominant, are widespread in South Australia under widely varying climatic conditions from the arid saltbush plains in the far north through to the lush, well-watered pastures of the South East.



Livestock numbers have increased markedly in recent years (although due to the effect of drought, sheep numbers fell by approximately 1,500,000 in 1967-68). The bulk of the expansion of the industry has been confined to the heavier rainfall districts. Carrying capacity has been boosted particularly by the introduction and adoption of new and improved pastures.

### The Dog Fence

This fence is an unbroken barrier of wire netting five to six feet high extending for more than 5,000 miles through South Australia, along the South Australia-New South Wales and the New South Wales-Queensland borders and through part of Queensland. It has been erected to protect the sheep lands of these States from the ravages of dingoes (native dogs). The part of the fence within South Australia, as shown on the map inside the back cover of this volume, extends in a tortuous line from the head of the Great Australian Bight to the New South Wales border for a distance of nearly 1,500 miles. The whole of the sheep population of South Australia is now confined within the area enclosed by the dog fence, which effectively excludes the dingoes.

### PASTURES

The significant increase in the area of sown pastures over the past nine years is shown in the following table.

Area Under Pasture<sup>(a)</sup>, Statistical Divisions, South Australia

Date	Statistical Divisions						Total
	Central	Lower North	Upper North	South Eastern	Western (b)	Murray Mallee	
	'000 Acres						
October							
1959..	896	254	44	1,428	509	485	3,616
1960..	1,050	340	51	1,790	663	704	4,598
1961..	1,132	374	57	2,025	828	829	5,245
1962..	1,142	366	64	2,140	787	859	5,358
1963..	1,133	365	61	2,246	883	886	5,574
1964..	1,240	411	60	2,431	1,035	1,037	6,214
1965..	1,303	417	63	2,590	1,099	1,089	6,561
1966..	1,310	432	68	2,651	1,193	1,085	6,738
1967..	1,306	422	77	2,746	1,149	1,013	6,713

(a) Lucerne, clovers (all kinds), rye grasses (all kinds), cocksfoot, paspalum, phalaris, primrose, sudan and veldt.

(b) Includes Outside of Counties.

To a very large extent the discovery of the relationship between clovers and soil fertility has been responsible for this rapid development of pastures. The nitrogen-building clovers have, in the cereal districts, raised both fertility and crop yields while at the same time providing ready grazing of high nutritional value for livestock. Murray Mallee and Western Divisions have been transformed through the sowing of more and improved pastures from unstable farming districts to highly productive areas.

Until recent years most pasture plants available flourished only in the higher rainfall zones and therefore pasture improvement was confined for the most part

to the Central and South Eastern Divisions. At that stage Mount Barker subterranean clover was the predominant pasture. New varieties have now been introduced, including Clare, Geraldton, Dwalganup and Yarloop subterranean clovers. These are suited to the hard setting soils of the important wheatgrowing area extending northward from Adelaide to Jamestown.

Another type of legume, known as medics, has been found to be suitable for the drier cereal country, especially the mallee soils. Five medics are grown: Hannaford, Jemalong Barrel, Harbinger Strand, Gama Paragosa and Snail. Lucerne is also extensively grown; it thrives under irrigation yet still grows in areas with as little as 10 inches of rainfall per annum. It is both salt-resistant and drought-resistant and is grown in most areas of the State. Strawberry clover is the important legume on the black soils of the South East.

The most important perennial grasses in the better rainfall areas are phalaris tuberosa, perennial rye grass and cocksfoot while most widely used in the medium to low rainfall areas is the annual, wimmera rye grass. The naturalised annual grasses which occur over the whole of the State contribute substantially to total pasture production.

Details of fertilisers used on pasture are given on pages 373-4.

## SHEEP

### Numbers and Distribution

The pastoral industry was the first to become established, mainly because there was an assured overseas market for wool, hides and tallow. The fertile plains north of Adelaide, as well as the Adelaide hills, offered ready grazing and by 1856, only twenty years after the first settlement, there were about 2 million sheep in the State. This trend continued with sheep numbers increasing to 7.6 million in 1891, a peak that was not exceeded until 1932. The severity of the droughts during this period is reflected in the reduced flocks of 1902 (4.8 million) and 1915 (3.7 million).

After 1932 sheep numbers steadily increased, exceeding 10 million by 1940, but again a drought severely reduced the numbers to less than 7 million in 1946. Thereafter the sheep population increased steadily as improved farming techniques raised the grazing capacity of the pastoral and wheat-sheep zones. At 31 March 1966 a record 17,993,000 sheep were being maintained, but drought reduced the number to 16,405,000 at 31 March 1968.

By far the greatest concentration of sheep is in the South Eastern Division, particularly in the southern portion of the division where the high rainfall and fertile soils provide ample year-round grazing. In the upper South East large scale land development schemes have, in the last decade, doubled the sheep carrying capacity in many areas by the application of trace elements to deficient soils.

A similar scheme was undertaken on Kangaroo Island (Central Division) where the sheep population rose from 258,000 in 1956 to 810,000 in 1968. Central Division contains the next largest sheep population with sheep fairly evenly distributed throughout, heaviest concentrations being on Yorke Peninsula, Kangaroo Island and in the southern Adelaide hills region.

Western Division, and in particular the southern portion of Eyre Peninsula, is the most important of the rest of the Divisions.

### Sheep Numbers, Statistical Divisions, South Australia

At 31 March

Year	Statistical Division							Total
	Central	Lower North	Upper North	South Eastern	Western	Murray Mallee	Outside of Counties	
	'000							
1959 .....	3,392	2,079	1,190	3,930	2,461	1,381	1,201	15,634
1960 .....	2,969	1,678	1,081	3,591	2,168	1,271	1,267	14,025
1961 .....	3,298	1,927	1,054	3,932	2,298	1,393	1,050	14,952
1962 .....	3,670	2,191	1,111	4,315	2,514	1,649	965	16,415
1963 .....	3,466	1,941	1,038	4,444	2,366	1,529	954	15,738
1964 .....	3,619	2,114	1,135	4,375	2,460	1,592	1,107	16,402
1965 .....	3,804	2,156	1,087	4,945	2,532	1,684	1,081	17,289
1966 .....	3,830	2,091	1,113	5,508	2,553	1,816	1,082	17,993
1967 .....	3,844	2,035	1,080	5,584	2,607	1,619	1,093	17,864
1968 .....	3,437	1,648	933	5,169	2,613	1,505	1,100	16,405

Between 1960 and 1966 there was a big increase in the number of sheep but a fall in the number of flocks—the number of smaller flocks (less than 500 sheep) falling quite considerably.

The distribution in statistical divisions of sheep flocks classified by size of flock at 31 March 1966 is given in the following table.

### Sheep Flocks Classified by Size of Flock, Statistical Divisions, South Australia

At 31 March 1966

Number of Sheep in Flock	Statistical Division							Total
	Central	Lower North	Upper North	South Eastern	Western	Murray Mallee	Outside of Counties	
	Number of Flocks							
Under 50 .....	722	121	27	175	21	72	—	1,138
50- 99 .....	311	65	17	65	18	29	—	505
100- 199 .....	556	160	44	109	28	56	1	954
200- 499 .....	1,435	760	266	362	209	322	2	3,356
500- 999 .....	1,412	908	251	523	852	750	3	4,699
1,000- 1,999 .....	806	433	215	972	730	508	9	3,673
2,000- 4,999 .....	329	113	90	790	223	114	25	1,684
5,000- 9,999 .....	23	23	25	135	18	10	32	266
10,000-19,999 .....	4	7	9	26	5	2	24	77
20,000 or more .....	—	—	—	3	3	2	12	20
Total flocks ...	5,598	2,590	944	3,160	2,107	1,865	108	16,372

At present about 22 per cent of the total sheep population consists of lambs and hoggets under one year. This proportion has remained fairly constant for a number of years although it is subject to some fluctuations. For example, as the next table shows, lamb numbers, which had fallen after some relatively poor lambing seasons, were built up considerably during the 1961-62 season.

**Age and Sex of Sheep, South Australia**  
**At 31 March**

Year	Rams	Breeding Ewes	Other Ewes	Wethers	Lambs and Hoggets (under one year)	Total Sheep
	'000					
1959....	198	7,284	826	4,264	3,062	15,634
1960....	188	6,489	883	3,588	2,877	14,025
1961....	187	7,397	690	3,854	2,824	14,952
1962....	190	7,531	786	4,110	3,798	16,415
1963....	196	7,258	812	4,144	3,328	15,738
1964....	199	7,545	772	4,277	3,609	16,402
1965....	208	7,938	813	4,515	3,815	17,289
1966....	218	8,165	831	4,694	4,085	17,993
1967....	220	8,331	804	4,729	3,780	17,864
1968....	215	7,751	788	4,118	3,534	16,405

**Breeds of Sheep**

The predominant breed in South Australia is the Merino which accounts for over 80 per cent of the total sheep numbers. The South Australian Merino having a robust constitution and a capacity to travel long distances to water has adapted well to the hot, dry conditions of the interior. Because of the particularly arid nature of the South Australian climate, pioneer breeders have developed a large-framed type of Merino, yielding an exceptionally high clip of medium to broad quality wool.

Of the remaining recognised breeds, the Australasian breeds, Corriedale and Polwarth, are most important. These are dual purpose sheep, used for mutton and at the same time producing wool of good quality. The Corriedale is a fixed cross between Lincoln rams and Merino ewes while the Polwarth is a fixed comeback bred from the mating of Merino rams with Lincoln-Merino ewes. British longwools (Border Leicester, Cheviot and Romney Marsh) are used for mating with the Merino or crossbred ewes mainly to produce fat lambs but also useful types of comeback and crossbred wools. British shortwools (Dorset Horn, Ryeland, Suffolk, Southdown and Shropshire) are used principally for production of export lambs.

**Breeds of Sheep, South Australia**  
**At 31 March**

Breed	1964	1965	1966	1967	1968
	'000				
Merino .....	13,897.0	14,581.2	14,981.0	14,856.9	13,418.1
Corriedale .....	923.0	1,003.2	1,092.9	1,158.6	1,113.0
Dorset Horn .....	41.4	42.0	44.7	46.5	58.9
Border Leicester .....	19.6	19.4	22.9	26.6	37.5
Polwarth .....	80.8	99.7	104.0	104.4	113.9
Romney Marsh .....	25.8	26.3	23.4	23.9	25.7
Ryeland .....	4.8	4.3	4.5	4.4	5.7
Southdown .....	5.8	5.5	5.5	5.4	7.8
Suffolk .....	15.9	13.4	14.7	16.7	17.0
Other .....	4.0	4.1	4.1	3.4	3.1
Merino-Comeback ...	257.7	284.2	260.7	220.1	213.6
Crossbred .....	1,126.7	1,205.2	1,434.7	1,396.7	1,391.0
<b>Total .....</b>	<b>16,402.5</b>	<b>17,288.5</b>	<b>17,993.1</b>	<b>17,863.6</b>	<b>16,405.3</b>

**Lambing**

In 1967 a record number of ewes (7,638,000) were mated and the number of lambs marked totalled 5,889,000. Early reports from farmers indicated that they intended to mate more than 7.5 million ewes in 1968—approximately 5.0 million to Merino rams, 1.3 million to other longwool rams and 1.3 million to shortwool rams.

The lambing percentage (*i.e.* of lambs marked to ewes mated) has never quite reached 80 per cent in South Australia, although it has been regularly over 70 per cent for a number of years. This represents a considerable improvement over the period prior to the 1939-45 War when the percentage quite often fell below 60 per cent and occasionally below 50 per cent in drought years. Details of lambs marked and the lambing percentage in each statistical division in recent years are given in the next table.

**Lambing, Statistical Divisions, South Australia**

Season	Statistical Division							Total
	Central	Lower North	Upper North	South Eastern	Western	Murray Mallee	Outside of Counties	
LAMBS MARKED ('000)								
1963.....	1,282	778	346	1,371	679	587	359	5,402
1964.....	1,400	893	359	1,384	751	675	277	5,739
1965.....	1,426	823	372	1,630	735	681	287	5,954
1966.....	1,372	829	380	1,672	758	649	314	5,974
1967.....	1,377	768	343	1,727	764	619	292	5,889
LAMBING PERCENTAGE (a)								
1963.....	80.9	77.5	71.8	84.9	73.5	75.6	77.4	78.9
1964.....	83.5	81.4	71.4	84.6	76.3	79.7	62.1	79.8
1965.....	82.7	77.3	72.4	86.8	74.0	78.2	62.1	79.3
1966.....	81.1	79.7	75.3	84.0	74.8	75.3	65.4	78.8
1967.....	80.6	77.4	70.3	81.8	73.4	73.9	63.3	77.1

(a) Percentage of lambs marked to ewes mated.

**Sheep Shearing and Wool-clip**

In the agricultural areas of the State there is a predominance of shearing during the late winter and spring months, August to November. Shearing in the South Eastern Division occurs somewhat later, with some 75 per cent of the wool-clip being obtained in the period October to November. In the northern pastoral areas (Outside of Counties) there are two main seasons, March-April and July-August.

The total wool clip, including crutchings, exceeded 200 million lb for the first time in 1964-65. More than 90 per cent of the total wool is obtained from adult sheep.

The average fleeceweight in South Australia is well over 12 lb per head for adult sheep. This is significantly higher than the yield obtained in other States, and is due primarily to the larger size of the South Australian Merino, its broader wool quality and longer thicker-stapled fleece.

### Sheep and Lambs Shorn, Wool-clip and Average Fleeceweight, South Australia

Classification	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
NUMBER SHORN ('000)						
Sheep .....	14,442	14,096	14,832	15,468	16,073	15,705
Lambs .....	3,417	3,540	3,911	4,282	3,962	3,896
Total .....	17,859	17,636	18,743	19,751	20,035	19,601
WOOL CLIP ('000 LB)						
Sheep .....	168,647	172,588	175,998	186,812	194,626	182,756
Lambs .....	12,419	13,137	14,829	15,975	15,467	13,165
Crutchings .....	8,788	9,062	9,232	9,958	10,279	9,662
Total .....	189,854	194,787	200,059	212,745	220,372	205,583
AVERAGE FLEECEWEIGHT (a) (LB)						
Sheep .....	12.29	12.89	12.49	12.72	12.75	12.25
Sheep and lambs ....	10.63	11.04	10.67	10.77	11.00	10.49

(a) Includes crutchings.

A breakdown of the State figures for 1967-68 by statistical divisions is given in the next table. This shows the high average fleeceweight obtained in the northern pastoral areas (Outside of Counties) and Upper North Division.

The relatively light average fleece obtained in South Eastern Division is explained partly by the lower proportion of Merino sheep in the area (at 31 March 1968 only 67 per cent of total sheep in South Eastern Division were Merinos, compared with a total State figure of over 82 per cent), but more importantly by the lighter wool quality of the Merino and the smaller framed sheep in this area.

### Sheep and Lambs Shorn, Wool Clip and Average Fleeceweight Statistical Divisions, South Australia 1967-68

Classification	Statistical Division							Total
	Central	Lower North	Upper North	South Eastern	Western	Murray Mallee	Outside of Counties	
NUMBER SHORN ('000)								
Sheep .....	3,433	1,700	909	4,951	2,372	1,430	910	15,705
Lambs .....	806	466	228	1,286	558	346	206	3,896
Total ....	4,240	2,167	1,136	6,236	2,930	1,776	1,116	19,601
WOOL CLIP ('000 lb)								
Sheep .....	39,177	20,474	11,899	53,017	28,985	17,211	11,993	182,756
Lambs .....	2,531	1,548	876	4,186	1,720	1,124	1,181	13,165
Crutchings .....	2,078	1,085	618	2,763	1,531	957	629	9,662
Total ....	43,786	23,107	13,393	59,966	32,236	19,292	13,803	205,583
AVERAGE FLEECEWEIGHT (a) (lb)								
Sheep .....	12.02	12.68	13.78	11.27	12.86	12.71	13.87	12.25
Sheep and lambs ..	10.33	10.66	11.78	9.62	11.00	10.86	12.37	10.49

(a) Includes crutchings.

## WOOL INDUSTRY

**Organisation of the Australian Wool Industry**

The *Wool Industry Act* 1962 made provision for the replacement of three separate instrumentalities (the Australian Wool Bureau, the Wool Research Committee and the Australian Wool Testing Authority) by a single overall body, to be known as the Australian Wool Board. The Board is thus responsible for the control and co-ordination of wool promotion, research and testing and acts as an advisory authority on wool marketing. The Board was inaugurated on 1 May 1963, being made up of eleven members, viz a chairman, six woolgrower representatives, three members with special qualifications and a representative of the Commonwealth Government.

Following the establishment of the Board, the Australian Woolgrowers and Graziers Council and the Australian Wool and Meat Producers Federation formed the Australian Wool Industry Conference. Principal functions of the Conference are to nominate woolgrower representatives for appointment to the Australian Wool Board; to recommend what rates of levy should be paid by woolgrowers for promotion and research, and to review the activities of the Board at least once a year. For research and promotional purposes levies have been imposed on shorn wool produced in Australia since 1936. The rate levied was 5 cents per bale until 1944 and 20 cents per bale in 1945. The levy was suspended in 1945 and contributory charges were imposed on woolgrowers. In 1952 the levy was resumed and set at 40 cents per bale; on 1 August 1960 it became 50 cents per bale; and during the 1961-62 season the levy was raised to \$1.00 per bale. In addition, the wool research levy was introduced in 1957 and was set at 20 cents per bale.

From 1 July 1964 a new levy, which includes the amount to be allocated to research, was fixed at a maximum rate of 2 per cent of the gross value of shorn wool sold. For 1964-65 the rate for the combined levy was  $1\frac{1}{2}$  per cent and from 1965-66 to 1967-68 it was 2 per cent. Following an amendment to the Wool Industry Act in 1967, the Government is contributing towards wool research and promotion, on a dollar for dollar basis matching the woolgrowers' contribution by levy, to a maximum of \$14 million in any one year during the three financial years 1967-68 to 1969-70. Under these arrangements the Government contribution is increasing by \$3-4 million annually.

**Production of Wool**

With the average cut per head increasing over time, wool production has been increasing at a greater rate than the sheep population, and in fact has more than doubled in the past twenty years.

Total wool production consists of shorn wool (including crutchings) plus fellmongered wool, dead wool and wool exported on skins. Fellmongering is the process of removing wool from the pelt by bacterial action (sweating) or by treatment with chemicals. Dead wool is picked from the carcasses of dead sheep.

By 1891 wool production had risen to 57 million lb and the average fleece weight was nearly 8 lb per head. Then with sheep numbers at a slightly lower level, wool production fluctuated seasonally between 36 million and 64 million lb until 1925 when it rose to 69 million lb.

The effects of the four year drought from 1927 to 1930 temporarily reduced the level but the improvement of the following seasons and the subsequent restocking caused a sharp increase in production. In 1938 the weight of wool



produced exceeded 100 million lb for the first time. Production then remained relatively stable until 1945-46 when it dropped significantly following the reduction in flocks caused by the 1944 drought. The industry recovered quickly and in 1947-48 a record 116 million lb of wool was produced, achieved by an increase in the numbers shorn and an exceptionally high average fleece of 10.87 lb. The rising trend has since continued with current production now exceeding 220 million lb.

Prior to 1946-47 the annual wool value had not exceeded \$14 million and was relatively stable. The marked changes in the value of wool produced since then have been mostly due to frequent and substantial price fluctuations rather than variations in the quantity produced. On the resumption of the auction system in 1946-47 wool prices increased sharply, reaching a peak in the record 1950-51 season. Gross value of production in that year exceeded \$132 million.

Demand eased in the following years causing values to fall, although a recovery in prices combined with a significant increase in production in 1956-57 raised gross value of production to \$114 million. Over the seasons 1957-58 to 1962-63 value varied between \$67 million and \$92 million but rose to \$113 million in 1963-64 following record wool production and somewhat higher prices. Since then wool prices have tended to stabilise at a lower level but by 1966-67 the gross value had risen again to \$105 million due to consecutive years of record wool production. However, in 1967-68 gross value fell to \$80 million due to lower production and much lower average prices.

**Wool Production and Value, South Australia**

Season	Production				Value of Wool Production
	Shorn Wool	Fell-mongered and Dead Wool	Wool Exported on Skins	Total	
	'000 lb	'000 lb	'000 lb	'000 lb	\$'000
1958-59 .....	170,645	1,353	14,844	186,842	67,595
1959-60 .....	180,236	733	17,320	198,289	85,382
1960-61 .....	162,876	713	13,824	177,413	70,484
1961-62 .....	192,205	1,670	13,109	206,984	85,801
1962-63 .....	189,854	952	16,538	207,344	92,514
1963-64 .....	194,787	15,713		210,500	113,409
1964-65 .....	200,059	15,677		215,736	94,328
1965-66 .....	212,745	16,888		229,633	103,635
1966-67 .....	220,372	17,122		237,493	104,588
1967-68 .....	205,583	17,084		222,667	79,925

### Quality of Wool

In general terms, quality refers to the diameter of wool fibre, which is usually indicated by the evenness and number of crimps or waves. Crimp is the main determinant of quality; the smaller and more even the crimp, the finer the wool.

Fineness is generally specified in terms of spinning ability, and in Australia is expressed generally in terms of Bradford Counts, which in practice, signify the number of hanks of yarn, each measuring 560 yards, obtainable from one pound weight of tops if spun to its fullest capacity. There are no commercial means of testing a batch of wool in its greasy state and therefore quality counts must

of necessity be estimates based on the experience of the wool expert. Quality counts range from as high as 90s to 100s for superfine Merino down to 32s for some English long wool breeds.

Other factors influencing grading are soundness (tensile strength), length of staple, condition, colour and style.

The South Australian Merino generally produces wool of a much broader quality than the Merino of the eastern States. The following table shows that only 0.1 per cent of wool sold in the 1967-68 season was 64/70s and finer; the corresponding New South Wales figure was 13.2 per cent.

**Quality Analysis of Greasy Wool Sold at Auction in South Australia**

Predominating Quality of Bale	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
	Per Cent						
64/70s and finer .....	0.2	0.2	0.2	0.3	0.1	0.1	0.1
64s .....	1.2	1.3	1.0	1.1	0.7	0.5	0.6
64/60s .....	4.2	6.1	5.5	5.3	4.9	3.5	4.1
60/64s .....	15.6	17.5	15.8	15.1	16.2	13.5	16.7
60s .....	40.6	39.8	42.1	41.4	43.3	41.0	41.7
58s .....	26.9	24.3	24.6	25.2	23.9	28.8	24.9
56s .....	7.3	7.1	6.9	7.6	7.4	8.8	8.1
50s .....	2.0	1.6	1.6	2.0	1.9	2.1	2.1
Below 50s .....	0.4	0.3	0.3	0.4	0.3	0.4	0.4
Oddments .....	1.6	1.8	2.0	1.6	1.3	1.3	1.3
Total .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The quality distribution of wool has remained relatively constant with over 80 per cent classified between 58s and 60/64s quality. In the following table bales of wool of South Australian origin sold at auction in Australia in the 1967-68 season are classified by spinning quality and the statistical division of origin.

**Quality of Greasy Wool<sup>(a)</sup>, Statistical Divisions, South Australia  
1967-68**

Predominating Spinning Quality	Statistical Division of Origin							Total (b)
	Central	Lower North	Upper North	South Eastern	Western	Murray Mallee	Outside of Counties	
	Bales							
64/70s and finer ....	286	6	—	2,214	52	46	47	2,651
64s .....	313	180	107	3,317	315	412	649	5,294
60/64s .....	2,917	1,740	1,663	8,895	3,845	2,659	2,751	24,470
60s .....	16,677	9,617	6,866	29,531	21,747	11,515	6,616	102,579
60/58s .....	27,338	14,951	9,974	34,593	28,680	13,769	9,003	138,319
58s .....	21,441	11,301	7,311	23,929	18,042	8,704	8,296	99,043
56s .....	32,253	15,982	10,470	37,390	18,067	9,879	13,486	137,578
50s .....	17,174	2,760	1,976	23,842	4,498	2,895	3,280	56,473
Below 50s .....	6,433	200	34	10,967	761	763	27	19,209
Oddments .....	805	36	8	3,797	299	187	2	5,137
	1,554	624	254	3,068	1,555	668	871	8,599
Total ....	127,191	57,397	38,663	181,543	97,861	51,497	45,028	599,352

(a) Wool of South Australian origin sold at auction in Australia.

(b) Including bulk-classed, interlotted and dealers' wool sold in Adelaide, but of unidentified origin.

The incidence of vegetable matter reduces the yield of all wool types. If the extent of vegetable fault is greater than 14 per cent of the wool's greasy weight the wool has to be treated by the carbonising process.

In a normal season just over 75 per cent of South Australian wool is free of, or contains only light burr and seed; almost 15 per cent contains medium or heavy burr and seed and some 10 per cent is carbonising wool.

#### Incidence of Vegetable Fault in Wool Sold at Auction In South Australia

Season	Free or Near Free	Light Burr and/or Seed	Medium Burr and/or Seed	Heavy Burr and/or Seed	Carbon- ising Wool	Combing Oddments	Total
Percentage of Total Number of Bales							
1958-59 ..	35.5	38.1	11.7	2.6	10.4	1.7	100.0
1959-60 ..	35.7	36.9	12.4	3.6	10.1	1.3	100.0
1960-61 ..	39.4	38.3	9.9	1.9	8.7	1.8	100.0
1961-62 ..	38.6	37.4	10.2	2.2	10.1	1.5	100.0
1962-63 ..	34.9	40.5	11.2	2.6	9.0	1.8	100.0
1963-64 ..	32.9	44.7	10.5	2.3	7.7	1.9	100.0
1964-65 ..	27.8	45.1	12.5	3.2	9.8	1.6	100.0
1965-66 ..	26.8	43.3	14.2	3.8	10.6	1.3	100.0
1966-67 ..	31.5	44.8	11.0	2.4	9.0	1.3	100.0
1967-68 ..	28.9	45.9	12.0	2.8	9.1	1.3	100.0

#### Wool Marketing

Approximately 9 per cent of wool grown in South Australia is sold outside the auction system. Of the South Australian wool passing through the auction system approximately 85 per cent is sold at the Adelaide Sales with the remainder, predominately of South Eastern origin, going to Victorian selling centres. A similar inflow of wool occurs from western New South Wales and to a lesser extent from western Victoria.

On receipt into a wool store each bale is weighed and then stacked. When a catalogue is to be prepared for the buyers, clips are listed and particulars of the various lots to be shown are supplied by the broker. A proportion of the required bales is then taken from the stacks and sent to the show floors for inspection. A valuation of every lot, based on current market rates is made by the broker for the protection of the grower at the auction.

At the Wool Exchange, the sales are conducted with great rapidity taking on average for a normal market only eight seconds to dispose of an individual lot or line of wool. On completion of the sale the bales are returned to the stacks to await instructions from the buyers. When required for shipment the bales are usually dumped, *i.e.* pressed to half their original size and banded to economise on shipping space.

Adelaide is the sole wool selling centre in South Australia, handling over half a million of Australia's 5 million bales annually. Twelve or thirteen sales are held each season depending on the quantity of wool expected to be offered.

During the main spring shearing season sales are held every two or three weeks, lengthening to monthly or longer intervals over the remainder of the year. Pastoral wools provide the bulk of the offerings in the early spring months with agricultural wools becoming more prominent as the season progresses.

Wools from the South East and other high rainfall areas make up a considerable proportion of the offerings in the summer months. Towards the end of the season wools are drawn from various parts of the State.

Details relating to Adelaide wool sales during the past eight seasons compared with 1950-51, the year of boom prices, are as follows:

#### Adelaide Wool Sales

Season	Wool Sold (Scoured and Greasy)		Amount Realised	Average Price Per Lb (Greasy)	In Store at End of Season
	Bales	Weight			
	Number	'000 Lb	\$'000	Cents	Bales
1950-51 ..	383,630	117,032	125,956	107.63	6,304
1960-61 ..	495,021	158,560	63,644	40.14	55,607
1961-62 ..	573,002	182,630	75,956	41.59	41,359
1962-63 ..	563,370	180,672	81,064	44.87	33,900
1963-64 ..	569,845	182,560	98,983	54.22	41,033
1964-65 ..	570,976	179,066	79,045	44.14	52,853
1965-66 ..	591,641	187,129	87,402	46.71	40,197
1966-67 ..	571,337	181,819	82,220	45.22	56,076
1967-68 ..	573,490	182,192	68,486	37.59	39,517

In November 1968 the Australian Wool Industry Conference voted for a non-statutory wool authority to be set up to streamline the wool auction system in Australia.

#### Wool Prices

Prices paid for wool sold in South Australia tend to be on average less than prices realised in other States, this being partly attributable to the large proportion of medium to broad quality wools grown in South Australia and in western New South Wales.

Average prices realised for greasy wool at Adelaide sales were below 6 cents per lb in the depression years of the early 1930s and then fluctuated between about 8 and 12 cents. Between 1945-46 and 1949-50 the price rose sharply to 48 cents and more than doubled to nearly 108 cents in 1950-51. There was an immediate drop to half this level in the following year and since then prices have been somewhat more stable, the lowest level in recent years being 38 cents and the highest 54 cents. Details of average prices of greasy Merino and Crossbred wool of various grades over the last ten seasons are given below.

#### Average Wool Prices, Adelaide Sales

Description	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
	Cents per Lb									
<b>Greasy Merino:</b>										
Superior .....	55	66	58	64	69	82	65	76	71	72
Good .....	48	57	50	52	59	70	57	67	65	59
Average .....	44	51	45	47	54	62	51	58	56	50
Wasty and inferior	36	42	38	39	43	53	41	47	46	39
Super lambs .....	45	55	50	53	58	71	67	62	57	56
Good lambs .....	35	41	37	38	42	50	45	47	42	42
Average lambs .....	22	27	25	23	27	38	31	34	29	25
Inferior lambs .....	17	21	17	20	21	28	24	26	23	19
<b>Greasy Crossbred:</b>										
Super Comebacks	53	62	52	57	62	77	59	68	64	60
Fine Crossbred ..	51	57	53	54	60	75	57	67	60	55
Medium Crossbred	46	54	52	51	55	72	52	63	53	43

## CATTLE

In comparison with other States, cattle grazing is not a major industry in South Australia. Of the cattle in Australia at 31 March 1968 only about 3 per cent of those used mainly for meat production and a little over 5 per cent of those for milk production were in South Australia.

**Cattle Numbers, Statistical Divisions, South Australia**  
31 March 1968

Classification	Statistical Division							Total
	Central	Lower North	Upper North	South Eastern	Western	Murray Mallee	Outside of Counties	
	'000							
Associated with milk production:								
Bulls (a) .....	2.8	0.5	0.1	1.4	0.2	0.4	—	5.5
Cows:								
In milk ...	58.3	3.6	1.0	8.9	1.4	8.9	—	82.1
Dry .....	26.1	2.6	0.7	23.9	0.7	2.8	—	56.8
Heifers:								
Springing ..	8.6	0.5	0.2	7.6	0.3	1.1	0.0	18.2
Other .....	15.9	0.9	0.3	4.3	0.3	2.5	0.0	24.1
Calves under one year .....	20.6	1.7	0.5	10.6	0.9	3.2	0.0	37.5
House cows ...	1.9	0.8	0.4	1.7	1.2	0.8	0.1	6.9
Total ....	134.2	10.7	3.2	58.2	5.1	19.7	0.1	231.1
Associated with meat production:								
Bulls (a) .....	1.9	0.6	0.2	4.7	0.6	0.4	2.3	10.8
Cows and heifers	42.6	8.3	4.8	116.7	11.2	11.3	62.2	257.0
Calves under one year .....	23.4	4.9	2.5	61.1	7.4	7.9	32.1	139.3
Other cattle ...	8.3	1.3	0.6	22.2	1.2	2.3	21.2	57.1
Total ....	76.2	15.1	8.1	204.8	20.5	21.8	117.7	464.1
Total cattle .....	210.4	25.7	11.3	262.9	25.5	41.5	117.8	695.2

(a) Aged one year or over, used or intended for service.

**Beef Cattle**

Beef cattle numbers have increased rapidly in the last fifteen years, exceeding 200,000 for the first time in 1952 and passing 300,000 by 1956. At 31 March 1968, 464,000 cattle associated with meat production were recorded, and although this figure is not strictly comparable with earlier figures (because of a change of classification adopted in 1964) it provides a good guide to the growth of the industry. In 1968 about 44 per cent of beef cattle were in the South Eastern Division, 25 per cent were Outside of Counties, 16 per cent in Central Division, and smaller numbers in other parts of the State. In the northern pastoral areas, Shorthorns are the predominant breed and there are lesser numbers of Herefords; in the South East, Herefords and Shorthorns are the main breeds and there are substantial numbers of Aberdeen Angus, while in the Central Division near Adelaide, where a number of studs are located, several breeds are well represented.

The northern pastoral region is traditionally the breeding area for beef cattle but there has been a trend towards moving cattle which were bred in this drier country to the better rainfall areas for fattening. The rapid increase in the area of sown pastures has contributed to the increase of beef cattle in southern parts of the State, since cattle do not crop the grasses as closely as sheep and thus are less likely to damage newly sown pastures.

Before 1957, 50 per cent or more of the beef cattle were Outside of Counties. The marked switch during the last sixteen years from Outside of Counties to the South East, and to other parts of the State, is illustrated in the following table.

**Proportion of Beef Cattle in Statistical Divisions, South Australia**

Statistical Division	1950	1953	1957	1963	1968 (a)
	Per Cent				
Central .....	7	8	10	15	17
South Eastern .....	25	24	31	49	44
Outside of Counties .....	60	59	49	23	25
Other areas .....	8	9	10	13	14
Total .....	100	100	100	100	100

(a) Proportions relate to 'Cattle for meat production'.

**Dairy Cattle**

In the last few years dairy cattle numbers have declined. The total number of cattle associated with milk production at 31 March 1968 was 231,000. Distribution within the State is also little changed although there has been some tendency for concentration in the principal dairying areas.

Properties in South Australia on which dairying is the main activity are situated mainly in the areas where high rainfall or irrigation permits the growing of sown pastures, but many of the mixed farms in the better cereal growing country carry dairy herds. Dairy production on these farms is almost entirely in the form of cream for butter making, whereas the properties in the sown pasture areas mainly market whole milk, either for consumption in the Adelaide area or for cheese making.

Commercial dairying activities are to be found mainly within an eighty mile radius of Adelaide. Of greatest importance is the Adelaide hills district, comprising the Mount Lofty Ranges and areas as far south as Cape Jervis and Encounter Bay. This district embraces some of the best dairy land in the State and includes most of the properties devoted specifically to dairy farming. Although some herds are grazed on natural pastures improved only by top dressing with superphosphate, the most common type is sown pasture consisting of subterranean clover in combination with perennial grasses such as perennial rye grass or phalaris.

Dairy production is mainly in the form of whole milk for consumption in Adelaide but the surplus from the flush period of the year is converted into cheese at factories situated at several centres throughout the Adelaide hills.

Most of the dairy breeds are represented; Friesians and Jerseys predominate, with Guernseys, Australian Illawarra Shorthorn, Ayrshires and their crosses in use to a lesser extent.

Other areas inside the eighty mile radius are the Lower Murray swamps and the Lakes District. The Lower Murray swamps extending from Mannum to Wellington are reclaimed areas ideally suited to dairying pursuits, combining the attributes of suitable climate, good soil, and convenient location and an abundant water supply. The swamps have a very high carrying capacity. A significant proportion of the produce is sold as whole milk in the Adelaide market, the remainder being used for cheese, butter and casein production. The cattle are predominantly Friesian. The farms are flood irrigated through sluice gates in the levees and distributing channels. Surplus water is led into a drainage system and pumped back into the river.

The Lakes District owes much to the barrages across the mouth of the Murray which have helped to maintain the waters of Lake Alexandrina and Lake Albert in a reasonably fresh state. These have greatly contributed to the improvement of productivity of this area and have also had the effect of maintaining a greater control over the level of the water in the river, thereby greatly facilitating irrigation of the reclaimed swamps upstream. The outlet for dairy products is generally towards the processing plants situated on the Murray. On the eastern side both cream and milk are produced whilst on the western side most of the produce is sold as whole milk. Where cream is produced, pig-raising is complementary to dairying. The dairy cattle are principally Jersey breed and enjoy a high reputation for productive ability.

Outside the eighty mile radius, the most important dairying area is the Lower South East, where the high rainfall and reasonably low evaporation rate combine to allow a fairly long growth period after the autumn and winter rains and spring flush of feed. The intensity of dairying varies with the different areas, being greatest on the richer peat and peat-type soils close to the coast and the rich volcanic soils around Mount Gambier.

Most breeds are well represented in the district, the Jersey and Friesian being slightly more popular than other breeds.

### DAIRY PRODUCE

#### Milk

Total milk production in any one year is not known precisely. However, as details are known of two major components of total milk utilisation in South Australia, viz the amount consumed by factories in the production of milk, cheese and other milk products and home consumption in the Metropolitan Milk Board area, a carefully considered estimate can be made.

The following table shows the estimated production of whole milk and the quantity of this milk used for various purposes in 1957-58 and later seasons.

**Production and Utilisation of Milk, South Australia**

Year	Total Milk Produced	Milk Used for					
		Butter		Factory Cheese (a)	Home Consumption		Other Purposes
		On Farm	In Factory		Milk Board Area	Outside Milk Board Area	
'000 Gallons							
1957-58 .....	80,606	802	29,886	23,012	15,536	9,908	1,462
1958-59 .....	82,121	783	29,879	24,280	16,267	9,379	1,533
1959-60 .....	78,572	720	25,892	23,729	16,999	9,636	1,596
1960-61 .....	87,029	645	29,817	27,504	17,591	9,800	1,672
1961-62 .....	95,504	604	33,100	32,314	17,859	9,907	1,720
1962-63 .....	95,378	553	31,229	33,492	18,282	10,206	1,616
1963-64 .....	97,523	531	32,622	33,989	18,631	9,791	1,959
1964-65 .....	102,330	458	33,435	37,857	18,991	9,805	1,784
1965-66 .....	98,398	432	30,921	35,659	19,558	9,927	1,899
1966-67 .....	98,727	396	29,458	37,710	19,462	9,780	1,921

(a) Factory production accounts for virtually all cheese produced.

The Metropolitan Milk Board is constituted to regulate the treatment and marketing of milk within the Metropolitan Milk Board area. The duties of the Board include the fixing of the metropolitan producing district and the granting of milk producers and treatment licences. The Board may fix the prices of milk and sweet cream and may make recommendations on the quotas of milk and cream which can be sold as such.

### Butter and Cheese

The quantities of butter and cheese produced during the last ten years were as follows:

**Butter and Cheese Production, South Australia**

Year	Butter (a)	Cheese (b)	Year	Butter (a)	Cheese (b)
	'000 Lb			'000 Lb	
1957-58 .....	16,061	23,510	1962-63 .....	16,608	33,967
1958-59 .....	16,103	25,088	1963-64 .....	16,791	34,236
1959-60 .....	14,151	24,483	1964-65 .....	17,392	38,836
1960-61 .....	15,610	28,245	1965-66 .....	16,326	36,281
1961-62 .....	16,861	32,835	1966-67 .....	15,245	38,598

(a) Includes factory and farm production.

(b) Factory production only.

### PIGS

In South Australia pigs are normally kept as a sideline on mixed farms or in conjunction with dairy cattle and there are relatively few holdings specialising in pigs.

Although there are substantial fluctuations in the pig population from year to year induced by the exceptional variability of prices, over time the numbers have remained remarkably stable. The total number exceeded 200,000 for the first time in 1966, yet it was over 160,000 as early as 1884. Of the record number of 242,300 pigs at 31 March 1968, over 60 per cent were in Central and Lower North Divisions. The total number of 242,300 pigs was made up of 4,100 boars, 32,300 breeding sows and 205,900 other pigs.

### MEAT PRODUCTION AND MARKETING

South Australia is a relatively small meat producer, providing only about 6 per cent of total Australian production. The Metropolitan and Export Abattoirs Board has the sole right within the Metropolitan Abattoirs area to slaughter stock for export as fresh meat in a frozen condition. It controls the handling and distribution of meat within this area and may fix the maximum number of stock sold in any one day in a Board controlled market. The following table shows the number of livestock slaughtered for human consumption and the production of meat during the last ten years. Slaughtering and meat production on rural holdings are included in these figures.



**Livestock Slaughtered and Meat Produced, South Australia**

Season	Livestock Slaughtered for Human Consumption			Meat Production (Bone-in-Weight)			
	Cattle and Calves	Sheep and Lambs	Pigs	Beef and Veal	Mutton and Lamb	Pigmeat	Total
	'000			Tons			
1958-59 ..	287	3,145	179	42,167	55,001	9,451	106,619
1959-60 ..	238	3,899	171	33,281	62,760	9,161	105,202
1960-61 ..	174	2,784	183	26,647	52,242	9,574	88,463
1961-62 ..	201	3,140	232	30,061	55,390	11,558	97,009
1962-63 ..	254	3,467	235	36,420	58,919	11,810	107,149
1963-64 ..	279	2,996	214	39,759	52,864	11,163	103,786
1964-65 ..	275	3,100	241	37,268	55,392	12,656	105,316
1965-66 ..	277	3,474	298	36,513	60,738	15,223	112,474
1966-67 ..	265	3,358	316	38,754	62,476	15,947	117,177
1967-68 ..	245	4,019	310	33,074	68,730	15,787	117,591

Average market prices of some of the principal classes of livestock are set out below. Generally prices fluctuate considerably from year to year, but for the beef lines a definite upward trend is evident over the past five years.

**Livestock, Average Prices at Adelaide Market**

Class of Stock	1964	1965	1966	1967	1968
	Dollars				
<b>Fat cattle :</b>					
Bullocks and steers ;					
Prime, medium ..	121.34	129.71	139.35	152.02	154.06
Good .....	104.35	117.08	122.47	134.49	132.89
Cows ;					
Prime, medium ..	100.51	120.50	136.80	128.29	121.10
Good .....	84.22	104.29	116.89	109.95	103.33
Calves ;					
Prime vealers ...	49.61	51.12	60.96	46.16	57.19
Good .....	37.92	35.06	44.24	27.30	38.04
<b>Fat sheep :</b>					
Merino wether ;					
Prime .....	9.61	9.25	9.84	8.76	8.07
Medium .....	8.02	7.89	8.31	7.64	7.00
Lambs ;					
Prime, medium ..	8.22	9.24	8.44	8.51	7.30
Good .....	7.28	8.01	7.61	7.40	6.59
<b>Pigs :</b>					
Choppers .....	78.12	66.45	64.02	75.68	79.14
Baconers .....	41.61	37.73	36.67	44.40	39.39
Porkers .....	22.54	19.37	19.98	23.28	23.74

The Australian Meat Board controls the export of meat, its sale and distribution overseas, and advises on matters relating to quality and grading of meat for export. The trading powers of the Board enable it to purchase and sell

meat in its own right for the purpose of developing existing markets or creating new markets where there are special problems or circumstances which preclude the effective participation of private traders.

Finance for the Board's operations is derived from a levy imposed under the *Livestock Slaughter Levy Act* 1964-1968. The levy is payable on the slaughter of all cattle (over 200 lb dressed weight), sheep and lambs for human consumption.

## OTHER RURAL INDUSTRIES

### Poultry Farming

The main concentration of poultry farmers is found close to Adelaide, with almost 87 per cent of table poultry sold in 1965-66 coming from the Central Statistical Division.

The poultry farming industry can be divided into two categories; the production of eggs, and the raising of poultry for meat. The annual average egg production controlled by the South Australian Egg Board was 11.8 million dozen in the five years ended 1957-58, 10.3 million dozen over the next five years and 11.6 million dozen in the five years ended 1967-68. However, these figures do not take into account movement of eggs interstate independently of the Egg Board, which may represent a significant proportion of total egg production.

Statistics collected relating to the sale of table poultry have shown a rapid expansion in this side of the industry. In 1965-66 the number sold was 3,072,000, this being over six times the number sold five years previously. Statistics of the number of table poultry sold have not been collected since 1965-66.

### Poultry Industry<sup>(a)</sup>, South Australia

At 31 March

Particulars	Unit	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
		Number					
Hens and pullets .	'000	1,550	1,534	1,553	1,408	1,631	1,733
Other fowls and chickens .....	'000	357	495	508	753	1,103	1,357
Ducks .....	'000	52	55	59	71	83	79
Turkeys.....	'000	50	55	60	71	78	62
Geese .....	'000	20	19	18	17	18	18
Table poultry sold.	'000	1,213	1,595	2,229	3,072	(b)	(b)
Egg production (c)	'000						
	dozen	9,918	8,731	9,261	11,198	13,176	15,813

(a) Excludes poultry kept in backyards, etc.

(b) Not collected.

(c) Recorded by the South Australian Egg Board.

### Beekeeping

Beekeeping in South Australia is only a small industry, for in 1967-68 there were just over 800 keepers with five or more hives. Of necessity, most commercial apiarists operate on a migratory basis, following the flowering of the various species of honey flora. The production of honey and beeswax fluctuates considerably from year to year, depending upon seasonal conditions.

**Beekeeping<sup>(a)</sup>, South Australia**

Season	Beekeepers	Hives		Honey Produced	Yield of Honey per Productive Hive	Beeswax Produced
		Productive	Un-productive			
	No.	No.	No.	'000 Lb	Lb	'000 Lb
1963-64	857	63,142	8,535	9,721	154	134
1964-65	781	58,728	13,900	6,527	111	90
1965-66	793	65,522	9,333	9,929	152	136
1966-67	784	57,311	15,511	6,588	115	93
1967-68	812	60,763	12,006	6,844	113	105

(a) Excludes particulars for producers having less than five hives.

**9.2 MINING, FORESTRY AND FISHERIES****MINING****INTRODUCTION**

In common with many industrialised countries, South Australia has a well developed and growing mineral industry. While iron ore is the major product, the State also has very large resources of industrial minerals which make up a significant proportion of the total annual value of mineral production—exceeding \$69 million in 1967.

Prior to the founding of the colony in 1836, small quantities of salt had been gathered in the salt lakes of Kangaroo Island. Soon after settlement was established at Adelaide, the first metallic mineral discoveries were made in the silver-lead lodes of Glen Osmond and copper ores of Montacute. Of much greater significance, however, were the discoveries of carbonate copper ores at Kapunda in 1843 and at Burra in 1845 followed in 1860 by the major copper fields of Wallaroo and Moonta.

While the first two were comparatively short lived, the Wallaroo-Moonta field prospered, surviving as a major copper producing field for sixty-three years until final closure in 1923. The relative importance of copper in the early years of the State can be seen from the following figures.

**Value of Mineral Production to 31 December 1918, South Australia**

	\$
Copper .. . . .	27,815,508
Iron ore .. . . .	2,993,466
Salt .. . . .	1,768,258
Gold .. . . .	1,313,840
Gypsum .. . . .	238,832
Other .. . . .	2,199,212
<b>Total .. . . .</b>	<b>36,329,116</b>

Details of production in various years since 1841 are given in the Statistical Summary on page 611.

During the period 1852-1900 gold discoveries were made at Echunga, Barossa, Waukaranga, Woodside, Mannahill, Teetulpa and Tarcoola. Although these fields attracted interest for a short time, all were small by world standards and most faded quickly into obscurity.

The major mineral industry of today, iron mining in the Middleback Ranges, had its beginnings early in the century as a supplier of flux to the lead smelters at Port Pirie. Developed as a source of iron ore for blast furnaces in the eastern States in 1915 it still supplies a major proportion of the requirements of the Australian steel industry. A further development was the establishment of an integrated steel industry at Whyalla in 1965.

Industrial minerals such as salt, gypsum, opal, talc, barite, and limestone have grown in importance in recent years. The quantity and value of production of the major minerals for years 1965 to 1967 are listed in the following table.

### Mining and Quarrying Production, South Australia

*As recorded by the Director of Mines*

Mineral	Quantity			Value		
	1965	1966	1967	1965	1966	1967
	'000 Tons			\$'000		
<b>Metal mining :</b>						
Iron ore .....	4,392	4,799	4,572	38,850	42,377	40,047
Pyrite concentrate .....	93	101	103	1,307	1,415	1,437
Other .....	..	..	..	11	19	21
<b>Fuel mining :</b>						
Coal (sub-bituminous) ...	2,016	2,021	2,045	3,263	3,226	3,271
<b>Non-metal mining :</b>						
Barite .....	10	11	13	137	169	184
Clay .....	492	552	512	734	790	759
Dolomite .....	245	238	271	425	425	473
Gypsum .....	560	603	607	1,346	1,476	1,498
Limestone .....	1,562	1,455	1,591	2,346	2,195	2,391
Opal .....	..	..	..	3,019	3,625	2,835
Salt .....	513	520	516	2,051	2,078	2,065
Talc and soapstone .....	10	6	7	155	96	107
Other .....	..	..	..	131	125	137
<b>Total mining .....</b>	..	..	..	53,776	58,016	55,225
<b>Construction material quarrying .....</b>	13,148	13,279	13,262	14,087	14,326	14,120
<b>Total mining and quarrying .....</b>	..	..	..	67,863	72,342	69,345

.. Not applicable.

### INDIVIDUAL INDUSTRIES

Details of mining of individual minerals are given below. Reference should also be made to an article in Part 1.3, pages 17-18 which contains particulars of the location of mineral resources. Map 5 on page 19 shows a number of localities referred to in this section.

### Iron Ore

The only proved high grade iron ores of South Australia lie in the Middleback Ranges to the west of Whyalla. The ranges are composed primarily of iron-rich rocks in which occur local concentrates of high grade ore.

The Iron Monarch deposit near Iron Knob has provided the bulk of the iron ore for Australia's steel industry for many years. Production from this and the smaller deposits of Iron Prince and Iron Baron is now maintained by the Broken Hill Pty Co. Ltd at the rate of over four million tons annually. The bulk of the ore is shipped to Newcastle and Port Kembla, but a proportion is used for the production of pig iron in the Whyalla blast furnaces for sale as pig iron, or use in the new basic oxygen furnace for ingot steel for the Whyalla rolling mills. In addition to the basic oxygen steel making plant, many facilities have been extended, and the \$20 million pellet plant commenced operation in 1968 at the rate of 1½ million tons of pellets per year.

Reserves of high grade iron ore, though large, are limited in extent, being estimated at about 170 million tons. The grade of ore at 62 per cent iron is exceptionally high by world standards, with the deposit at Iron Monarch having added importance because of its high manganese content. In view of the known limitation of high grade ore, the Broken Hill Proprietary Company has carried out an active exploration programme, and is also planning future use of the very large reserves of low grade siliceous ores known to exist in the Middleback Ranges.

### Barite

There are widespread occurrences of barites (barytes) throughout the Adelaide System rocks of South Australia. Deposits are located in a number of areas including the Mount Lofty and Flinders Ranges and the Olary district.

Barite is still used in the paint and other industries, but there is now a great increase in the demand for lower grade barite used in drilling mud for oil exploration.

The company operating the Oraparinna Mine in the Flinders Ranges, which has for some years been the major Australian producer of barite, is increasing threefold the capacity of its mill at Quorn. A number of old and new deposits are also being opened up by other companies.

### Gypsum

South Australian deposits contain by far the largest part of Australian reserves of gypsum. The deposits have in general been formed in coastal basins cut off from the ocean, giving rise to extensive deposits of rock gypsum. The most important coastal deposits are found at Lake MacDonnell, Stenhouse Bay and on Kangaroo Island. Inland deposits mainly of seed gypsum occur at Moonabie, Lake Fowler, Cookes Plains and along the Murray River. The gypsum deposits have been worked extensively over the past fifty years to provide the bulk of Australasian requirements for the plaster industry and for portland cement manufacture. Present production now exceeds 500,000 tons annually.

Reserves of high grade gypsum in Lake MacDonnell have been proved by the Department of Mines to exceed 500 million tons, sufficient to meet Australia's requirements for many generations. Because of its remote location on the West Coast of South Australia, development of the deposit has been slow. A new rail link has been constructed between the deposit and the bulk loading installations at the port of Thevenard. The rail distance has been reduced from 63 to 34 miles, and the port is to be deepened to accommodate larger ships.

### Salt

The semi-arid climate and high evaporation rate along much of South Australia's coast line, together with the high salinity of the gulf waters, create very favourable conditions for the production of salt by solar evaporation. The availability of sites close to cheap transport led to the establishment of solar salt works at the head of Spencer Gulf near Port Augusta and at Whyalla, at Price on the eastern shore of Yorke Peninsula, and in 1940 at Dry Creek near Adelaide. In addition several operators recover salt from shallow salt-lakes on Yorke Peninsula and elsewhere.

At present South Australia produces over 500,000 tons annually, and provides some 80 per cent of Australia's salt requirements. The industry in South Australia is capable of expansion, but the future export market appears to have been largely captured by salt development in Western Australia, where ports for very large ships are available.

### Opal

Precious opal was discovered in 1915 at Coober Pedy and in 1930 at Andamooka. From very small beginnings the value of opal production has grown till it now exceeds \$3 million annually. In terms of value it ranked third only to iron ore and coal as the most important mineral produced in South Australia during 1967.

In spite of the value of opal being won at present, opal mining remains a small scale operation. Both Andamooka and Coober Pedy are small outback settlements with few amenities and with floating populations. The distances from Port Augusta to Andamooka and Coober Pedy are 200 and 400 miles respectively.

Mining at both centres is relatively shallow, rarely exceeding ninety feet. The extent of the opal fields is not known as there has been no systematic exploration, but it is probable that the fields will continue to yield the gem for many years.

### Pyrite

In the vicinity of Nairne, thirty miles south-east of Adelaide, there has long been known to exist an enormous body of iron pyrite extending for a distance of at least six miles. Until 1950 this deposit was of little economic significance. However, a world shortage of sulphur, upon which the fertiliser industry is dependent for sulphuric acid, made it necessary to utilise local sources at that time.

Limited exploration of the deposit was made by private enterprise, and extended by the Department of Mines and resulted in the proving over some two miles in length, of fourteen million tons of mineable ore containing 10 per cent of recoverable sulphur. Development, sponsored and aided by the Government, was then undertaken as a joint enterprise by local companies. Regular production commenced in 1955 and an annual output of about 100,000 tons of concentrate containing approximately 40,000 tons of sulphur is utilised for acid and fertiliser manufacture at Birkenhead.

### Talc

The principal occurrences of talc are to be found at Mount Fitton in the Northern Flinders Ranges and in the Gumeracha district. From these sources approximately 7,000 tons a year are mined to supply more than 30 per cent of

Australia's requirements. The Mount Fitton talc is particularly high grade, and is in demand for use by the cosmetic industry. Lower grade material is used in the rubber, paint, and ceramics industries.

### Coal

South Australia is deficient in bituminous coal resources and the only mining is of sub-bituminous coal at Leigh Creek. The field was discovered in 1888 during dam sinking operations, leading to an unsuccessful attempt at underground mining in the years 1892-1908.

The present development of the field commenced with Department of Mines drilling operations in 1941. The Electricity Trust of South Australia assumed control of the field in 1948 and developed it as a source of fuel for the Port Augusta power station. Meanwhile testing by the Department of Mines continued for some years, proving a total of fifty-three million tons of coal available by open cut methods and a further 350 million tons of underground reserves.

Coal production in 1967 was over two million tons. Almost the entire production is railed to Port Augusta for use in power generation supplying about two-thirds of the State's requirements of electric power.

### Limestone and Dolomite

The combined tonnage of limestone and dolomite extracted each year is in excess of 1.5 million tons. The principal deposits mined are limestone at Rapid Bay and dolomite at Ardrossan for the steel industry, limestone at Penrice for the chemical industry, lime sand from Coffin Bay for the metallurgical industry, and limestone at Angaston and Klein Point for the cement industry. In the process of development are the very large lime sand deposits of Coffin Bay. It is anticipated that approximately one million tons of sand will be taken from Coffin Bay each year and railed to Port Lincoln for trans-shipment to the Whyalla smelters and interstate.

#### Limestone Production, South Australia

*Excluding limestone used as building stone, road materials, etc.*

Classification	1963	1964	1965	1966	1967
	'000 Tons				
Flux.....	751.8	591.9	602.6	647.1	788.1
Cement .....	594.5	713.5	692.3	538.8	527.9
Chemical .....	214.6	222.3	244.8	244.5	255.2
Other.....	13.2	13.8	22.0	24.2	19.6
Total .....	1,574.1	1,541.5	1,561.7	1,454.6	1,590.8

### Clay

South Australia possesses a wide variety of clays which are used for industrial purposes such as cement manufacture, building bricks and roofing tiles, refractory ware, pottery and ceramic purposes. Because of the scarcity of local timber supplies, softwoods excepted, much greater use is made of clay bricks for construction in South Australia than in other parts of Australia. The clay brick industry is concentrated near Adelaide.

There are also widely distributed occurrences of special clays for ceramic and refractory ware, the most noteworthy being the ball clay at Woocalla, china clay at Mount Crawford, and fire clay at Birdwood, Littlehampton, Tea Tree Gully, Booleroo Centre, and Lincoln Gap.

### Clay Production, South Australia

Classification	1963	1964	1965	1966	1967
	'000 Tons				
Brick clay and shale .....	407.3	517.1	386.3	450.9	419.3
Cement clay (shale) .....	13.0	21.1	29.2	35.2	34.2
Fire clay .....	29.5	27.2	27.4	24.0	21.5
Kaolin and ball clay .....	3.8	4.5	7.4	7.6	8.5
Pottery clay .....	34.7	26.0	41.8	34.4	29.0
Total .....	488.3	595.9	492.1	552.1	512.5

The Department of Mines, together with the Australian Mineral Development Laboratories, is continually engaged in investigations relating to the usage of clay deposits encountered during geological surveys throughout the State.

### Construction Material Quarrying

Post-war industrial expansion, accompanied by extensive housing programmes and highway construction has resulted in a rapidly increasing demand for construction materials. Production rose from less than two million tons in 1947 to thirteen million tons in 1967.

A variety of building stones is quarried including Mount Lofty sandstone, a white stone which hardens in the atmosphere; Basket Range sandstone, a dark coloured stone of pleasing appearance, and Mount Gambier limestone, a bryozoal limestone of the South East. Limestone deposits have also been worked at Overland Corner, Cadell and Waikerie. A quantity of granite is extracted each year and marble occurrences are worked at Angaston, Kapunda, Macclesfield and Paris Creek. The main sources of slate in South Australia are at Willunga and Mintaro. Both areas supply paving slate and a large quantity of Mintaro slate is dressed and polished.

### Building Stone, South Australia

Type of Stone	1963	1964	1965	1966	1967
	'000 Tons				
Granite .....	2.4	2.1	2.9	4.4	4.8
Limestone .....	13.5	13.9	14.1	11.2	16.4
Marble .....	1.7	1.8	2.2	2.2	2.9
Sandstone .....	4.8	10.8	9.0	8.4	12.1
Slate .....	2.7	2.9	3.4	4.4	10.5
Total .....	25.1	31.5	31.6	30.6	46.7

Production of other construction materials is shown in the following table. The importance and expansion in production of limestone (predominantly for construction of roads) and quartzite (mainly in the form of screenings) can be seen.



## Road and Other Construction Materials, South Australia

Type of Material	1963	1964	1965	1966	1967
	'000 Tons				
Limestone .....	4,127	6,051	5,449	5,615	5,640
Quartzite .....	3,146	3,624	3,759	3,454	3,208
Sand .....	2,031	1,854	1,795	1,586	1,756
Other materials .....	2,101	2,653	2,113	2,593	2,658
Total .....	11,405	14,182	13,116	13,248	13,262

## MINERAL DEVELOPMENTS

Delivery of natural gas to Adelaide from the Moomba, Gidgealpa and Daralingie fields is expected by November 1969. The established recoverable reserves of natural gas on these fields now exceeds one billion (one million million) cubic feet. Construction of the 486 mile, 22 inch diameter Moomba to Adelaide natural gas pipeline is now in progress for the Natural Gas Pipelines Authority. This Authority was established by the State Government to transport the gas on a cost of service basis.

Commercial production of carbon dioxide from Caroline No. 1 Well has commenced. This well, located 12 miles east of Mount Gambier, is one of the few in the world supplying high purity carbon dioxide.

Exploration for copper, uranium and other minerals has greatly increased over the past year. At the end of 1968, the number of current Special Mining Leases granted for mineral exploration work exceeded one hundred.

On one of these leases at Puttapa, near Beltana, outcrops of the zinc silicate mineral willemite were discovered. This find has been investigated further and it has been reported that the deposit contains one million tons of ore with a grade of about 37 per cent zinc. A trial shipment has been sent for metallurgical testing. The grade is so high that concentration is unlikely to be needed at the mine.

On another lease at Mount Painter, deposits of monazite have been discovered and reserves of uranium totalling 1.5 million tons with a grade of 2 lb uranium oxide per ton have been announced.

Exploration for copper in the Wallaroo-Moonta district is being continued. A trial shaft has been sunk at Kanmantoo and driving is in progress to obtain a large bulk sample for metallurgical tests to determine whether the deposit can be worked profitably for copper.

The Mount Gunson copper deposits have been tested and it is expected that production will begin early in 1970.

A number of old mines are attracting interest. The Kitticoola, an old copper and gold mine near Palmer east of Adelaide, is being re-opened and a treatment plant has been erected. Another mill is to be established at the old Prince Alfred copper mine near Carrieton. Some lead ore has been produced and is being treated at the old Baratta mine. Copper is produced from an old mine at Bundaleer and from the treatment of mine dumps at the Lorna Doone Mine near Lyndhurst.

There has been a great increase in the demand for barite as the heavy constituent of drilling mud, with a corresponding rise in production. Lower grade material can be used for this purpose, because the colour of the product is not critical as it is for most other uses of barite, and the selling price of the drilling grade barite is correspondingly lower.

The following table shows details of private mineral exploration, other than petroleum, in South Australia for 1966 and 1967.

**Private Mineral Exploration<sup>(a)</sup> (Other than Petroleum), South Australia**

Particulars	Unit	On Current Producing Leases		On Other Areas		Total Private Exploration	
		1966	1967	1966	1967	1966	1967
Footage:							
Drilled .....	'000ft	2	8	180	152	182	160
Other .....	'000ft	—	—	1	—	1	—
Man weeks worked (b)....	'000	0.2	0.2	3.0	3.4	3.2	3.6
Expenditure:							
Drilling .....	\$'000	9	34	555	348	564	382
Other .....	\$'000	5	6	789	815	794	821
Total .....	\$'000	14	40	1,344	1,163	1,358	1,203

(a) Excludes exploration for water and all developmental work.

(b) Excludes work carried out by contractors.

Details of private petroleum exploration and development for South Australia are shown in the following table for the years 1963 to 1967.

**Private Petroleum Exploration and Development, South Australia**

Particulars	Unit	1963	1964	1965	1966	1967
Wells drilled (a) .....	number	11	14	8	13	15
Footage drilled .....	'000ft	66.0	84.0	49.5	57.2	105.0
Expenditure:						
Private sources .....	\$'000	3,663	3,592	4,705	4,059	6,257
Government subsidy (b)	\$'000	806	1,084	949	769	1,058
Total .....	\$'000	4,469	4,676	5,654	4,828	7,315

(a) Number of wells reaching total depth during year.

(b) Payments under the *Petroleum Search Subsidy Act* 1959-1964.

**EMPLOYMENT AND WAGES**

The number of persons engaged in mining and quarrying in South Australia (expressed as an average over the period of operation) is shown in the next table.

**Employment in Mines and Quarries<sup>(a)</sup>, South Australia**

Classification	1963	1964	1965	1966	1967
Mines:					
Less than 4 employees .....	992	969	1,050	1,175	1,174
4 or more employees .....	1,106	1,112	1,089	1,064	1,028
Construction material quarries:					
Less than 4 employees .....	263	242	239	256	319
4 or more employees .....	757	919	994	898	846
Total .....	3,118	3,242	3,372	3,393	3,367

(a) Average number employed including working proprietors.

Wages and salaries paid in the larger mines and quarries are shown in the following table. Drawings by working proprietors are not included.

**Salaries and Wages Paid in Mines and Quarries<sup>(a)</sup>, South Australia**

Classification	1963	1964	1965	1966	1967
	\$'000				
Mining:					
Salaries .....	465	534	517	571	567
Wages .....	2,492	2,598	2,659	2,745	2,812
Construction material quarrying:					
Salaries .....	125	167	172	184	179
Wages .....	1,566	2,029	2,110	2,054	1,965
Total salaries and wages	4,648	5,328	5,457	5,554	5,522

(a) In mines and quarries with four or more employees during period worked.

**MINING ADMINISTRATION**

The principal functions of the Department of Mines are:

- The administration of mining and petroleum legislation including the granting of mineral leases and collection of royalties and fees.
- Geological and geophysical investigations to ascertain the extent and nature of the State's mineral resources.
- Drilling to test mineral deposits, petroleum reserves and underground water supplies.
- Development of sub-surface water supplies for farming, pastoral, irrigation and mining purposes.
- Control of development of underground water in certain defined areas.
- The testing and treatment of minerals, generally in arrangement with the Australian Mineral Development Laboratories.

The Mining Act, 1930-1962 deals with such subjects as authority to prospect and the acquisition of mining titles.

The Mines and Works Inspection Act, 1920-1966 regulates in respect to 'the state and condition of the mine, machinery, ventilation, and all other things relating to the safety, health and well-being of the employees and general public'.

The Petroleum Act, 1940-1968 and the Petroleum (Submerged Lands) Act, 1967 provide for the control of petroleum exploration and the production, conservation and distribution by pipeline of petroleum.

The Underground Waters Preservation Act, 1959-1966, proclaimed in February 1967, provides for the control of water boring and of groundwater usage in 'defined areas', and for the licensing of drillers.

## FORESTRY HISTORICAL

South Australia was the first State to inaugurate a forest policy. This, however, was probably due more to need and past misgivings than to foresightedness, as much of the productive areas of the State had been denuded of natural vegetation by the early settlers. The first attempt came in 1873 with the passing of an Act authorising the issue of a land order valued at \$4 per acre to landowners who planted and maintained forest areas, but only one landowner successfully availed himself of this offer.

Forest management in South Australia dates from the Forest Board Act of 1875 when 195,000 acres were placed under the control of a Board, together with the power to proclaim further reserves. The two basic functions of the Forest Board were to promote the protection, and hence the regeneration, of natural vegetation, and to demonstrate the practicability of forestry.

By 1877 the Board had established nurseries at Bundaleer and Wirrabara in the Flinders Ranges and Mount Gambier in the lower South East of the State. It had also planted 1,000 acres of eucalypts and pines at Bundaleer and had carried out small plantings of pines around the Mount Gambier lakes. Further plantings followed at Wirrabara and Mount Burr. *Pinus radiata*, the native of California which today dominates the South Australian forestry scene, was first planted experimentally in 1876.

The first Conservator of Forests took office in 1878. The Forest Board was abolished in 1883 and the Woods and Forests Department established, the Conservator of Forests becoming departmental head. This was the first forests department to be established in the then British Empire; forest reserves in that year stood at 150-000 acres.

In 1881 the Government introduced a scheme for the free distribution of seedlings to landowners and between 200,000 and 300,000 trees were distributed each year until 1924-25 when the scheme was terminated.

By 1890, with continued planting, particularly in northern areas, a total of over 9,000 acres had been planted and the area of reserves had increased to 225,000 acres. During these early years a multiplicity of species was planted in an effort to determine those best suited to the local environment. From this astute experimentation there emerged a distinct pattern of development. By 1909 a pronounced swing to softwood plantings was under way although softwoods still accounted for only 12 per cent of total plantations. The first pines were felled between 1903 and 1910, and their encouraging yield provided such an impetus for further plantings that softwoods accounted for 35 per cent of area planted by 1920.

The future pattern of forestry development was now well established. The South East had become the centre of forestry operations and *Pinus radiata* the dominant species. The planting of hardwoods had virtually ceased, and in 1923

the Government released many of the small reserves and plantations in the north, the operation of which had ceased to be economical.

Forestry development entered a period of vigorous growth in the mid 1920s when greatly increased expenditure was available to the State authorities and when private interests, impressed by early successes with *Pinus radiata*, began developing plantations. Prior to 1924-25 the State's expenditure on afforestation had come from general revenue, but henceforth it was to come from loan funds thus permitting a considerable increase. Furthermore, the Development and Migration Commission decided to sponsor a large scale afforestation programme and in the period 1925-1937 advanced a total of \$670,000 for this purpose. During this period the Woods and Forests Department established on average over 5,000 acres of new forest each year and considerable areas were planted by private interests. Details of planting in this and subsequent periods are given in the following table.

**Area Forests Planted, South Australia**

Particulars	1929-36	1937-44	1945-52	1953-60
	Acres			
State .....	47,500	18,650	24,050	27,746
Private .....	12,000	6,550	2,100	10,099
Total .....	59,500	25,200	26,150	37,845

### THE FOREST ESTATE

There are an estimated 23.5 million acres of land classified as forests in South Australia although most is of very low grade and of little economic value. Some 2.5 million acres, however, are currently considered as exploitable but half of this area yields only firewood. Although uneconomic for timber getting, many forests are of considerable value through soil conservation, and timbered areas help regulate climate and provide shelter, shade and natural beauty.

Certain areas have been set aside as State forest reserves, the area thus reserved at 30 June 1967 being 287,213 acres. In addition the Woods and Forests Department is responsible for 4,000 acres of planted forests on reservoir lands. Although the total area reserved has shown little fluctuation since 1929 the area under plantation has been consistently increasing.

### Indigenous Forests

The natural forests of South Australia consist of eucalypt hardwoods restricted principally to the Mount Lofty Ranges, the lower Flinders Ranges, the southern portion of Eyre Peninsula, and the South East. A few species are of commercial value and these are devoted largely to the production of poles, posts, rails and sleepers. The mallee lands provide an important source of firewood. Areas of forest reserves not yet planted with conifers are maintained in natural hardwoods but it is unlikely that further hardwood plantations will be established except in small trial areas.

## Exotic Plantations

Exotic softwoods accounted for 98 per cent of the planted forest area at 30 June 1968.

As can be seen from the accompanying tables the vast majority of planted forest is situated in the South East. With an annual rainfall in excess of 25 inches the South East has proved an ideal site for forestry activity. The Mount Lofty Ranges, geographically suitable for pine forests, contain only limited areas because of the comparatively high price of land.

The following table clearly illustrates the overwhelming importance of one species, *Pinus radiata*, in the composition of South Australian forests.

## Forests, South Australia

## Area Planted During 1967 and Area of Plantations at 30 June 1968

Location	Planted during 1967			Plantations at 30 June 1968		
	Softwoods		Hard-woods	Softwoods		Hard-woods
	<i>Pinus Radiata</i>	Other Pinus		<i>Pinus Radiata</i>	Other Pinus	
State Forests:	Acres					
South East;						
Penola .....	683	—	—	27,498	3,855	197
Mount Burr .....	1,171	10	—	30,171	2,151	168
Mount Gambier .....	338	81	—	17,588	1,651	21
Myora .....	828	96	—	11,715	567	—
Caroline .....	1,017	190	—	10,648	984	—
Tantanoola.....	347	118	—	6,635	474	11
Comaum.....	428	—	—	5,846	559	16
Other.....	150	—	—	2,487	270	3
Total South East ....	4,962	495	—	112,588	10,511	416
Central ;						
Mount Crawford.....	329	—	—	7,282	754	508
Kuitpo .....	—	26	—	5,036	1,008	353
Reservoir areas .....	245	17	—	1,970	169	1
Other.....	74	—	—	3,632	613	150
Total Central .....	648	43	—	17,920	2,544	1,012
Northern .....	205	1	—	5,713	229	1,039
Murray Lands .....	—	—	—	—	15	120
Western .....	—	—	—	85	33	850
Total State forests....	5,815	539	—	136,306	13,332	3,437
Private Forests:						
South East (a) .....	n.a.	n.a.	n.a.	37,194	—	—
Other.....	n.a.	n.a.	n.a.	3,656	—	285
Total private forests .	1,561	—	—	40,850	—	285
Total forests.....	7,915	—	—	190,488	—	3,722

(a) Small plantations on farming properties have been included in 'Other'.

n.a.—Not available.

Despite the virtues of relative ease and cheapness in planting and rapid growth *Pinus radiata* is likely to play a less prominent role in future forestry expansion as areas suitable for its cultivation are now limited. Experimental plantings have proved *Pinus pinaster* to be most promising on sites unsuitable for *Pinus radiata* and this species should become increasingly prominent.

The 539 acres of 'Other' softwoods planted in State forests during 1967 were mostly *Pinus pinaster*, bringing the total area of that species standing at 30 June 1968 to 11,428 acres. In all, some twenty-five species of pines are growing in State forests, although the majority were planted in earlier periods of experimentation.

### Forests, South Australia

#### Net Area of Plantations at 30 June

Location	1964	1965	1966	1967	1968
State Forests:					
South East;	Acres				
Penola .....	28,573	29,134	30,004	30,868	31,550
Mount Burr .....	28,630	29,166	30,226	31,338	32,490
Mount Gambier .....	18,654	18,803	19,152	19,232	19,260
Myora .....	10,807	11,100	11,369	11,428	12,282
Caroline .....	7,081	7,855	8,885	10,425	11,632
Tantanoola .....	6,165	6,270	6,619	6,654	7,120
Comaum .....	4,904	5,205	5,586	5,992	6,421
Other .....	2,005	2,207	2,472	2,609	2,760
Total South East ..	106,819	109,740	114,314	118,546	123,515
Central;					
Mount Crawford .....	7,394	7,527	7,668	8,215	8,544
Kuitpo .....	6,277	6,281	6,338	6,372	6,397
Reservoir areas .....	1,238	1,391	1,598	1,876	2,140
Other .....	4,198	4,393	4,521	4,330	4,395
Total Central .....	19,107	19,592	20,125	20,793	21,476
Northern .....	6,088	6,269	6,548	6,771	6,981
Murray Lands .....	135	135	135	135	135
Western .....	932	942	958	958	968
Total State forests ..	133,081	136,678	142,080	147,203	153,075
Private Forests:					
South East (a) .....	33,044	34,136	35,107	34,995	37,194
Other .....	2,818	3,028	3,491	3,651	3,941
Total private forests	35,862	37,164	38,598	38,646	41,135
Total forests ...	168,943	173,842	180,678	185,849	194,210

(a) Small plantations on farming properties have been included in 'Other'.

Seedlings raised in nurseries are planted out at a density of 700-900 trees to the acre. A series of thinnings, starting when the trees are about ten years old, reduces the density to 100-150 trees to the acre at age thirty. These thinnings are carried out on a commercial basis and make an important and very substantial contribution to timber and pulpwood output. The clear felling age is

aimed at not less than forty years although for management purposes some earlier felling has been necessary in the past.

### FOREST ADMINISTRATION

#### State Forests

State forests are administered by the Woods and Forests Department. The Conservator of Forests is departmental head and each forest reserve is in the charge of a professionally trained forester.

In earlier years when large areas of plantations were being established expenditure by the department naturally exceeded revenue, but since 1942-43 the revenue has exceeded expenditure including depreciation and interest on loans. By 1954-55 accumulated surpluses had almost matched expenditure on establishment and maintenance of plantations, and it was decided to pay future annual surpluses of the department to Consolidated Revenue.

Funds employed by the Woods and Forests Department, including its milling operations, amounted to \$24,089,000 at 30 June 1967 of which \$11,547,000 was represented by timber stands and land at net cost. During 1966-67 working account receipts from the forestry operations of the Department were \$7,691,000 as against payments of \$5,422,000. During the year a contribution of \$1,440,000 was made from surpluses on operations to Consolidated Revenue.

#### Private Forests

Private forests accounted for approximately 21 per cent of the planted area at 30 June 1967. A small number of private companies operating pine plantations in the South East controlled the bulk of private forest land, the balance representing a large number of holdings of a few acres on farming properties throughout the State.

### PRODUCTION

The following table gives the quantity and value of output of forest logs over the last five years.

**Forest Log Production, South Australia**

Year	Softwoods		Hardwoods	
	Quantity	Value (a)	Quantity	Value (a)
	'000 Sup Ft (b)	\$	'000 Sup Ft (b)	\$
1962-63 .....	312,304	5,169,108	5,489	122,338
1963-64 .....	308,651	5,073,842	7,504	179,338
1964-65 .....	322,018	5,630,964	6,944	164,411
1965-66 .....	320,981	5,898,746	5,849	128,825
1966-67 .....	334,111	5,752,789	5,039	114,222

(a) Value on mill skids.

(b) Full round measure.

Log production depends on the supply of mature trees and on thinning operations, and planned forestry management ensures that the amount of timber cut each year does not exceed new growth. As planting during the ten years prior



to 1925 was relatively light the number of mature trees available in recent years has been limited, and thinning operations have provided approximately two-thirds of log production.

By contrast the extensive plantings of 1926-34 are now reaching maturity and production is therefore expected to increase rapidly in the immediate future. Forestry in South Australia has almost reached a stage where the full annual yield can be cut in perpetuity.

Other forestry products include firewood, yacca gum, wattle bark and eucalyptus oil.

### EMPLOYMENT

The number of persons directly employed by the Woods and Forests Department in forestry activity in recent years is given below. The Department also employs some 600 persons in milling activities.

The townships of Mount Burr (population 1,738 at 30 June 1966) and Nangwarry (977) are maintained by the Department.

**State Forestry Employees, South Australia**  
*At 30 June*

Classification	1964	1965	1966	1967	1968
Professional staff:					
Foresters .....	35	35	32	32	38
Other .....	41	39	36	35	37
Non-professional field staff .....	7	7	12	9	12
Clerical staff .....	97	103	109	114	112
Labour (silvicultural forest works, etc.) .....	275	244	288	254	313
Total .....	455	428	477	444	512

The extraction of timber from State forests is carried out by contractors. At 30 June 1968, 340 persons were employed extracting timber from forests in South Australia.

### RESEARCH AND ADVISORY SERVICES

The virtual dependence of the South Australian forestry industry on a single species necessitates continued research into the maintenance and expansion of *Pinus radiata* resources, as well as into forestry in general.

The Woods and Forests Department maintains its own research facilities and in addition combines with the Commonwealth Forest Research Institute in operating a regional branch of the Institute at Mount Gambier. Certain aspects of forestry research are also undertaken by the Soils Division of the Commonwealth Scientific and Industrial Research Organisation and the Waite Agricultural Research Institute.

Research activities aimed at an expansion of forestry production include the development of fertilisers, both to stimulate growth and to bring into production land previously considered unsuitable, and the improvement of planting stock through selective breeding. Preventive research is concerned with the extremely important question of soil deterioration and with combating various diseases and pests. Permanent sample plots have been established in departmental forests as an aid to research into various aspects of forest management.

The Woods and Forests Department provides an advisory service in arboriculture and distributes, through the Belair nursery, a wide variety of trees which have been selected for the adaptability to various climatic and soil conditions.

### FOREST PROTECTION

The hot dry summer conditions in the State require forest managements to take considerable precautions and to maintain constant vigilance against forest fire. The clearing of undergrowth, the maintenance of fire-breaks, the manning of observation towers and the constant readiness of fire fighting units are all an integral part of forestry practice.

Other protective measures include spraying to prevent the disorder known as 'die-back', exposing land prior to planting to counteract the bark beetle and the eradication of the various weeds and pests which threaten young plants.

Since the discovery of the *Sirex* wood wasp in Victorian forests in 1961 constant watch has been maintained for any sign of this pest in South Australian pine forests.

### FISHERIES

The entire coastline of South Australia except for the unpopulated area west of Fowlers Bay, is fished commercially. In the sheltered waters of the gulfs, Kangaroo Island, the Coorong and the West Coast bays, there are net and handline fisheries; in the open off-shore waters tuna, crayfish and shark are sought; and inland in the River Murray a small quantity of fresh water fish is caught each year.

### HISTORICAL

The earliest commercial fishing industries were associated with oysters and with net and handline fishing for whiting, snapper and net-fish. Oysters were severely overfished and by 1930 supplies were reduced to such an extent that they no longer could be commercially exploited. The fishing for whiting by hand line and the general net fishery have remained operative and have benefited from modern methods of handling, transporting and marketing.

Crayfish were also taken quite early in the State's history but it was not until the establishment in the 1950s of the American market for frozen cray-tails, with its high prices, that production was substantially increased.

Shark fishing in South Australia developed in conjunction with the crayfish industry as the fishing areas were generally similar and the boats easily converted for either type of fishing. The main expansion in shark fishing occurred in the early 1950s when there was a strong demand for shark from Victoria and prices were attractive. Production which reached a maximum in 1957, decreased when the Victorian price fell and the market for shark liver oil collapsed. Recently markets have improved and production has risen substantially.

Early attempts at trawling throughout the State gave poor results except in the Great Australian Bight where several productive grounds were discovered. In an attempt to establish trawling in this area the Commonwealth Government purchased the trawler *Southern Endeavour* and the grounds were fished for a period of eighteen months during 1960 and 1961. Although fish were landed in commercial quantities, financial returns were insufficient to justify continuation of the programme and the vessel was sold. The development of a trawling industry might be possible in the future when techniques and markets improve.

Tuna 'live bait poling' was introduced into South Australia in 1956 when two American fishermen were invited to the State to demonstrate this technique and within a few years the production of tuna exceeded that of any other species.

### ADMINISTRATION

Exploitation of the State's fish resources is controlled by two Acts, the State Fisheries Act, 1917-1967 and the Commonwealth *Fisheries Act* 1952-1968. Under the State Act, which is administered by the Fisheries and Fauna Conservation Department, provision is made for the licensing of fishermen, the registration of boats and gear, and the maintenance and improvement of port and harbour facilities. Control of fishing activity is maintained by licence limitations, the establishment of size limits, closed areas and closed seasons, the regulation of amount and type of gear, and the prohibition of the use of explosives or noxious substances.

Small patrol boats and four-wheel drive vehicles are used for the inspection of inshore waters. In December 1968 a 19 foot patrol boat was purchased for the purpose of patrolling offshore waters. Light aircraft operate in conjunction with these units which are based in the major fishing ports on the South Australian coastline.

The Commonwealth Fisheries Act which complements State legislation and provides for management of resources in extra-territorial waters now extends Australia's territorial fishing limit from three miles to twelve miles; this provision came into force on 30 January 1968.

### FISHERMEN AND BOATS

Vessels exceeding 60 feet are engaged primarily in tuna fishing and prawn trawling while the majority of vessels in the 25 feet to 60 feet range are used for crayfishing and longlining for shark. The remainder are engaged mainly in handline and net fisheries. A new method of boat registration adopted by the Department in 1965-66 enables greater detail regarding boat size to be recorded. Figures prior to this period are not however available on a comparable basis. Boats and equipment were valued at \$8,762,000 in 1967-68. The numbers of persons and boats engaged in commercial fishing activities are shown in the following table.

**Fishing: Persons and Equipment Engaged, South Australia**

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Persons engaged (a) .....	8,520	9,300	10,400	12,830	13,052(b)
Boats engaged (c) .....					
Under 20 feet .....			1,443	1,437	1,701
20 feet and under 30 .....			400	400	432
30 feet and under 40 .....			99	112	120
40 feet and under 50 .....		Not available	44	52	68
50 feet and under 60 .....			17	13	18
60 feet and under 70 .....			6	12	8
70 feet and over .....			10	12	13
Total .....	1,636	2,300	2,019	2,038	2,360

(a) Includes full-time and part-time licensed fishermen. Full-time fishermen estimated at 2,400 in 1967-68.

(b) At 30 November 1968.

(c) Due to increased policing of Fisheries legislation the total number of boats shown from 1964-65 is not strictly comparable with previous years.

PRODUCTION

Marine Fish

Tuna, shark, whiting, garfish and salmon are the most important marine species.

Tuna are taken in the waters south of Eyre Peninsula and Kangaroo Island. Occasional catches are taken beyond the continental shelf. Although purse-seining has been attempted the only successful technique to date is pole fishing with live bait. The use of spotting aircraft has increased the efficiency of fishing operations. Most tuna are landed at Port Lincoln although occasional landings have been made at Port Adelaide.

Whiting are taken commercially in Gulf St Vincent, Spencer Gulf, Investigator Strait and the West Coast bays. In many areas hand lining continues to provide profitable catches as this fish attracts a high price. In other areas of the gulfs and the West Coast, netting restrictions have been eased and large quantities of whiting and garfish are netted.

Shark fishing extends from the Victorian border in the east to Fowlers Bay in the far west. The main landing ports are the South East crayfish ports, Port Adelaide, Port Lincoln and Victor Harbor. Shark are taken by long line and, more recently, by mesh netting.

Australian salmon provides useful off-season fishing for a number of tuna fishermen with the best catches being taken in Spencer Gulf and around Kangaroo Island. Most of these fish are landed at Port Lincoln for canning. In the South East large quantities of salmon trout are netted for crayfish bait. Of other species mullocky and snapper are highly regarded as table fish. Mullocky are netted in the River Murray Mouth area and snapper are taken by hand and long line in most areas of the State, and by netting in shallower parts of the gulfs and West Coast bays.

Fresh Water Fish

Approximately 210 part-time commercial fishermen using drum nets, gill nets and set lines are engaged in fishing on the River Murray and Lakes area. Murray cod and callop are the mainstay of this fishery. This is the only commercial source of fresh water fish in the State because of the general lack of permanent streams and lakes. The river has been sectioned into 'reaches' and 'reserves' and each commercial fisherman is issued with a permit to fish a separate reach.

Production

Production in 1960-61 was valued at \$1,610,000 and by 1967-68 had reached \$2,884,000. The gross values of the major species taken in 1967-68 were:

	\$
Spotted Whiting . . . . .	921,000
Tuna . . . . .	590,000
Shark . . . . .	370,000
Garfish . . . . .	243,000
Australian Salmon . . . . .	214,000
Snapper . . . . .	187,000
All other . . . . .	359,000
	<hr/>
	2,884,000
	<hr/>

The main commercial fish species, together with their production in recent years, are listed in the following table.

### Fish: Production by Species, South Australia

#### Estimated Live Weight

Species	1963-64	1964-65	1965-66	1966-67	1967-68
	'000 Lb				
<b>Marine :</b>					
Australian salmon.....	1,245	1,155	1,405	2,370	2,382
Bream (black) .....	54	50	70	35	94
Garfish .....	620	630	741	1,015	809
Mullet .....	600	610	505	545	526
Mulloy .....	141	147	194	359	325
Ruff .....	475	530	376	835	524
Shark .....	2,397	1,937	2,063	3,770	3,266
Short finned Pike (a).....	390	330	282	290	322
Snapper .....	579	647	652	936	855
Tuna .....	12,085	10,430	13,217	7,521	6,560
Whiting (spotted) .....	1,615	1,810	1,800	1,680	1,809
Other marine species .....	535	510	425	580	618
<b>Total .....</b>	<b>20,736</b>	<b>18,786</b>	<b>21,731</b>	<b>19,937</b>	<b>18,092</b>
<b>Freshwater :</b>					
Golden perch (callop) .....	400	350	250	300	120
Murray cod .....	75	50	70	90	50
Other .....	—	—	—	—	23
<b>Total .....</b>	<b>475</b>	<b>400</b>	<b>320</b>	<b>390</b>	<b>193</b>
<b>Total fish production ..</b>	<b>21,211</b>	<b>19,186</b>	<b>22,051</b>	<b>20,327</b>	<b>18,285</b>

(a) Previously known as snook.

### Crustaceans

Crayfish are taken by craypots between the shore and the edge of the continental shelf. The South East coast between Kingston and the Victorian border is the main fishing area. Good catches are also taken from grounds around Kangaroo Island, near the Althorpe Islands and Port Lincoln, and along the West Coast. Since 1964-65 the value of crayfish production has exceeded the value of scale fish species. Early in 1968, regulations were approved by Executive Council to divide South Australia into northern and southern zones with the Murray Mouth as the dividing line. In an attempt to reduce the intensity of crayfishing and increase the stability of the industry, legislation was passed in 1967 prescribing boat limits and pot limits.

Although prawns were known to exist in South Australian waters, it was not until late in 1967 after a series of successful catches in Spencers Gulf that the commercial potential was realised. Many tuna boats were converted and the fishery was established, fishing being limited to licensed vessels. In the 1967-68 season approximately 295,000 lb valued at \$148,000 were landed.

## Crayfish Production, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Estimated gross weight ('000 lb)	4,325	4,928	6,063	6,249	5,264
Value (\$'000) .....	1,671	2,833	3,334	3,249	3,369

## Molluscs

Resources of abalone were until recently relatively unexploited, but overseas markets have encouraged an important commercial fishery. Originally catches were taken at Cape Jervis and Wallaroo but are now taken mainly from Eyre Peninsula and the far West Coast.

All divers must hold a professional fisherman's licence as well as a special abalone permit issued by the Department of Fisheries and Fauna Conservation.

## Abalone Production, South Australia

Particulars	1964-65	1965-66	1966-67	1967-68
Gross (in shell) weight ('000 lb)	62	58	630	4,051
Value (\$'000) .....	<i>n.a.</i>	4	63	581

*n.a.*—Not available.

Squid and cuttlefish are taken in the general net fisheries and mainly sold for bait, although some are sold for human consumption.

At present there are three experimental oyster leases in South Australia.

## MARKETING AND PROCESSING

Marketing and processing arrangements vary according to the species. Tuna are landed at Port Lincoln and then canned for local consumption or frozen for export. Large catches of salmon are generally landed and canned at Port Lincoln, a deep sea port. Crayfish are tailed and frozen for export at most of the main ports, but some are cooked for local consumption. Some prawns are cooked and sold locally but most are frozen and exported. Abalone is either canned or frozen for export. Shark are gutted and headed at sea and are frozen at the port of landing for interstate markets. Other fish are generally iced for dispatch to the Adelaide market or are scaled, filleted and frozen for general distribution.

All of the main landing ports have chilling or freezing facilities and many have processing plants. Several of these are operated by individual buyers but most are depots of the South Australian Fishermen's Co-operative Limited (Safcol). This is the larger of the State's two fishermen's co-operatives, the other being the Yorke Peninsula Fishermen's Co-operative based at Moonta. In

addition to collecting, processing and distributing fish from the outports, Safcol also operates the Adelaide fish market. This is an auction market which handles fish for both members and non-members.

### RESEARCH

In recent years the realisation that research is essential for effective fisheries management has promoted several research programmes. Tuna, crayfish, salmon and shark resources are being investigated by a joint Commonwealth and States group consisting of the Division of Fisheries and Oceanography of the Commonwealth Scientific and Industrial Research Organization, the Fisheries Division of the Commonwealth Department of Primary Industry, and the Fisheries departments of New South Wales, Victoria, Tasmania and South Australia. Research is also being undertaken to determine possible uses for fish stocks which are not at present utilised. In addition, the State Fisheries and Fauna Conservation Department is conducting whiting and abalone research programmes. All programmes are directed towards providing a scientific basis for the management of the fisheries concerned.

## 9.3 MANUFACTURING

### DEVELOPMENT

Early factory production was naturally orientated to local needs: thus brick kilns, flour mills, tanneries, distilleries and a candle and soap works were among factories recorded in the 1840s. Also in operation were the smaller establishments of saddlers and coachbuilders, while various food and clothing industries were being established. Heavy industry can probably be traced to the production of agricultural machinery, beginning with the stripper of 1843 and including the stump-jump plough of 1876.

The discovery of copper in 1843, together with later discoveries, provided an impetus to certain industrial pursuits. However, the finding of gold in Victoria in 1851 led to an exodus of skilled personnel from which the Colony's infant industries were not fully to recover for some two decades.

A highlight in the industrial progress of the State was the establishment at Port Pirie in 1889 of smelters for the processing of silver-lead ore from Broken Hill. This was primarily responsible for building up Port Pirie's population from about 900 at the 1881 Census to some 8,000 twenty years later, making the town at that time the largest country centre in South Australia.

There had been customs tariffs from very early days, but it was not until the 1880s that they reached a level offering protection to secondary industries. Further stimulus was provided in 1901 when the establishing of the Commonwealth provided for free trade between the States and the erection of a common tariff barrier. After the 1914-18 War manufacturing industry again expanded with the assistance of still higher tariffs.

In the following table various measures of industrial development have been recorded for the period since 1920.

## Factory Development, South Australia

Period	Factories	Persons Employed (a)	Motive Power (b)	Value of Land, Buildings, Plant and Machinery	Value of Production
	No.	No.	'000 hp	\$'000	\$'000
Five year average :					
1920-21 to 1924-25	1,578	33,382	84	11,415	9,789
1925-26 to 1929-30	1,823	37,617	150	35,816	25,344
1930-31 to 1934-35	1,710	27,409	185	35,206	16,308
1935-36 to 1939-40	2,025	42,337	266	36,680	26,338
1940-41 to 1944-45	2,172	64,778	359	66,218	50,210
1945-46 to 1949-50	2,788	72,302	467	83,876	76,564
1950-51 to 1954-55	3,410	84,490	638	144,164	180,598
1955-56 to 1959-60	4,211	94,045	904	282,584	273,508
1960-61 to 1964-65	5,608	106,262	1,371	512,841	398,608
Year :					
1962-63 .....	5,766	105,265	1,317	506,571	379,142
1963-64 .....	5,826	110,813	1,456	560,908	427,356
1964-65 .....	5,887	116,183	1,599	645,469	498,588
1965-66 .....	6,065	118,343	1,653	699,989	527,477
1966-67 .....	6,222	118,220	1,863	767,310	563,764

(a) Average employment for whole year ; includes working proprietors.

(b) Rated horsepower of engines ordinarily in use. From 1940-41 excludes motors driven by electricity of own generation, to avoid duplication.

Despite certain industrial growth, South Australia in the 1930s was still basically a primary producing State; it is over the last thirty years that a really rapid growth in the relative contribution of secondary industry to total production has taken place. Development in the 1930s coincided with Government action which reduced company taxation and wharfage charges, and provided for a programme of low-cost housing. The needs of war provided a further stimulus to the industrialisation process during the 1940s; it is since the 1939-45 War, however, that the most impressive development has taken place.

## THE CONTENT OF FACTORY STATISTICS

The period covered by the statistics is generally the twelve months ended 30 June. In cases where some other accounting period is used, returns may be obtained for that accounting period. These cases, however, are comparatively few, and their inclusion in no way impairs the comparability of the statistics in the year under review or from year to year. In preparing the statistics the following definitions have been applied.

**Factory.** For the purposes of the accompanying statistics a factory is defined as an establishment in which four or more persons are employed or where power-driven machinery is used in manufacturing, repairing, or assembling. It should be noted that the details relating to small establishments not classified for statistical purposes as factories are not included in the figures shown herein. Also excluded are the activities of the Commonwealth Department of Supply and the various private firms working within the Weapons Research Establishment at Salisbury and at the testing range at Woomera.



If a manufacturing business is conducted in conjunction with any other activity, particulars relating to the manufacturing section only are included in the statistics.

*Average Number of Persons Employed.* All persons employed in the manufacturing activities of a factory are counted as factory employees. The figures relating to employment, therefore, exclude all those engaged in selling and distribution, such as salesmen, travellers, collectors, carters engaged solely on outward delivery of manufactured goods, and retailing storemen. The figures, however, include proprietors who work in their own businesses and 'out-workers'.

The average number of persons employed is quoted on two different bases: the average during the period of operation and the average over the whole year. Of these, the former is simply the aggregate of the average number of persons employed in each factory during its period of operation (whether the whole or only part of the year); this average is used only in respect of details relating to classification according to number of persons employed. The latter, which is used in all other instances, is calculated by reducing the average number working in the factories (irrespective of period of operation) to the equivalent number working for a full year.

Working proprietors are included in all employment figures other than those relating to age dissections, but in all cases drawings by working proprietors are excluded from salaries and wages paid.

*Value of Premises and Machinery.* The values shown include an allowance for rent capitalised where premises and machinery are not owned by the occupiers.

*Costs of Production.* This item includes the value, in the usual sense, of materials used, stores used, containers, tools replaced, materials used in repairs to plant, and the cost of power, light, lubricants and water used. In general, it does not include the value of customers' articles or materials repaired, assembled, or treated by the factory.

*Value of Output.* The value of factory output is the value of the goods manufactured or their value after passing through the particular process of manufacture and includes the amount received for repair work, work done on commission, and receipts for other factory work. The basis of valuation of the output is the selling value of the goods at the factory exclusive of all delivery costs and charges and excise duties but inclusive of bounty, and subsidy payments to the manufacturer of the finished article.

*Value of Production.* The value of production is the value added to raw materials by the process of manufacture. It is calculated by deducting from the value of factory output the value (at the factory) of materials, containers, packing, power, fuel, and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges).

In the process of manufacture many goods are treated in several industries, the output of one becoming the raw materials of another, so that such commodities are counted more than once in the aggregate value of output and of raw materials. On the other hand the aggregate value of production is assessed without duplication, the value added by each industry being taken into account once only. For this reason the value of production, and not the value of output is usually the more useful measure of activity.

There are many miscellaneous expenses, such as maintenance of buildings, depreciation, workers compensation insurance, other insurances, pay-roll tax, income tax, advertising, interest on borrowed money, bad debts, and many other

sundry charges, which are not taken into account. Consequently, it must not be inferred that when wages and salaries are deducted from value of production the whole of the surplus is available for interest and profits.

### THE CLASSIFICATION OF FACTORIES

In a number of tables in this section factories are classified by the nature of their output into sixteen major classes. A complete list of the sub-class structure of the classification appears on pages 418-20 of the *South Australian Year Book* 1968.

Where the nature of goods produced would place the factory in more than one class and where its activities cannot be thus separated it is classified according to its predominant activity.

This classification is being used in processing the results of the 1967-68 Census of Factory Activity. However, in conjunction with the development of a series of integrated economic censuses and surveys, an Australian Standard Industrial Classification is being developed; this new classification, which embraces all economic activity, will be used in publication of the results of the first round of integrated economic censuses which are being conducted for the year ended June 1969.

### LEGISLATION

Industrial legislation is dealt with in Part 7, Labour. Other legislation is concerned with the location of factory premises and with the processes carried out therein.

Under the Local Government Act, 1934-1969 local government authorities may make by-laws restricting the erection of factory premises to certain sections of the area under their jurisdiction. The Manufacturing Industries Protection Act, 1937 provides for the proclamation of certain areas wherein proprietors and occupiers of factories are protected against civil action for noise and vibration problems. This Act, which takes precedence over zoning by-laws, currently applies to four relatively small zones. Regulations made under the Noxious Trade Act, 1943-1965 have defined certain processes as noxious trades for which a licence must be obtained. In addition an area between Wingfield and Dry Creek in the outer northern suburbs has been declared a noxious trade area with persons operating therein being protected from civil action.

Similarly the licensing of noisy trades may be required under a section of the Local Government Act. Protection against health hazards is provided under the Health Act, 1935-1968.

### THE STRUCTURE AND LOCATION OF SECONDARY INDUSTRY

Post-war industrialisation has to a considerable extent evolved around three major industrial groups. The motor vehicle, the electrical goods and the household appliance industries, together with their peripheral suppliers of components and services, have accounted for much of the post-war expansion. These industries are located in, or near Adelaide. In fact the tendency for manufacturing industries, particularly those supplying consumer goods, to congregate near their market has resulted in a heavy concentration of South Australian secondary industries in or near Adelaide.

At the 1966 population Census a new area, the Adelaide Statistical Division, was defined which includes some large industrial plants close to Adelaide, particularly the oil refinery at Port Stanvac and the motor works at Elizabeth, which were not included in the Adelaide Metropolitan Area as defined prior to 30 June 1966. The Adelaide Statistical Division will be used in classifying factory statistics in the future replacing the former Adelaide Metropolitan Area.

In the following table factory activity is shown for the Adelaide Statistical Division and the rest of the State for the years 1965-66 and 1966-67.

#### Factory Activity, Adelaide Statistical Division and Rest of State

Year	Factories	Persons Employed (a)	Value of Land and Buildings	Value of Plant and Machinery	Value of Output	Value of Production
	No.	No.	\$'000	\$'000	\$'000	\$'000
ADELAIDE STATISTICAL DIVISION						
1965-66	4,175	96,115	212,840	230,917	990,068	424,478
1966-67	4,334	95,168	228,025	246,590	1,018,036	440,746
REST OF STATE						
1965-66	1,890	22,228	63,691	192,541	280,470	102,999
1966-67	1,888	23,052	68,327	224,369	327,122	123,229

(a) Average over whole year; includes working proprietors.

The following table, which has been included for comparative purposes shows some details of factory activity for each of the five years 1961-62 to 1965-66.

#### Factory Activity, Adelaide Metropolitan Area<sup>(a)</sup> and Remainder of State

Year	Factories	Persons Employed (b)	Value of Land and Buildings	Value of Plant and Machinery	Value of Output	Value of Production
	No.	No.	\$'000	\$'000	\$'000	\$'000
METROPOLITAN AREA						
1961-62	3,437	75,529	133,468	132,568	595,321	269,034
1962-63	3,599	80,606	145,940	144,599	686,154	296,835
1963-64	3,662	82,896	157,838	149,112	756,790	326,123
1964-65	3,689	85,910	171,293	161,179	814,116	360,349
1965-66	3,832	87,047	183,435	167,527	846,709	374,132
REMAINDER OF STATE						
1961-62	2,082	23,565	63,127	120,438	208,274	78,794
1962-63	2,167	24,659	67,024	149,009	227,920	82,307
1963-64	2,164	27,917	72,790	181,168	304,996	101,233
1964-65	2,198	30,273	85,244	227,753	392,714	138,239
1965-66	2,233	31,296	93,096	255,931	423,830	153,345

(a) As defined for census purposes prior to 30 June 1966.

(b) Average over whole year; includes working proprietors.

Generally industrial plants outside the metropolitan area are orientated to sources of supply, exceptions being the production of agricultural machinery at

Mannum and the presence of woollen mills at Lobethal and Mount Gambier. Wallaroo and Port Lincoln, being central to their markets, are the sites of chemical fertiliser production.

The two most important undertakings beyond the vicinity of Adelaide are the iron and steel complex at Whyalla and the lead smelters at Port Pirie. These undertakings together with the power station at Port Augusta are sited for important mineral sources. Other factories are located near sources of primary products and include the sawmills and paper pulp industries of the South East, the fruit processing plants of the Upper Murray, the wineries and distilleries of the Barossa Valley and the Murray, and various dairy product factories and fish processing plants.

In the following table details of factories for 1966-67 are classified according to industrial class. The dominating position of class 4 which includes the industrial metals treatment, motor vehicles, electrical, and consumer durable industries referred to above, can be clearly seen.

**Factories by Class of Industry, South Australia, 1966-67**

Industrial Class	Factories	Persons Employed (a)	Value of Premises and Equipment	Salaries and Wages Paid (b)	Other Costs of Production	Value of Production
	No.	No.	\$'000	\$'000	\$'000	\$'000
1. Treatment of non-metalliferous mine and quarry products .....	208	2,305	28,338	6,560	20,453	17,747
2. Bricks, pottery, glass, etc. ....	71	2,117	13,376	5,684	7,568	10,848
3. Chemicals, dyes, explosives, paints, oils, grease .....	110	3,298	45,168	9,640	67,069	39,852
4. Industrial metals, machines, conveyances .....	3,190	69,321	384,343	184,115	426,966	306,402
5. Precious metals, jewellery, plate .....	177	569	1,963	993	977	1,930
6. Textile and textile goods (not dress) ..	65	2,775	8,902	6,019	12,129	11,461
7. Skins and leather (not clothing or footwear) .....	40	995	2,698	2,614	11,162	3,615
8. Clothing (except knitted) .....	519	5,351	11,324	8,536	10,014	14,840
9. Food, drink and tobacco .....	739	12,288	69,402	28,354	129,709	64,916
10. Sawmills, joinery, boxes, etc., wood turning and carving .....	452	5,789	20,802	12,628	27,732	23,229
11. Furniture of wood, bedding, etc. ....	216	2,245	5,967	4,321	8,638	8,010
12. Paper, stationery, printing, book-binding, etc. ....	195	5,654	48,647	14,465	25,730	28,048
13. Rubber .....	56	1,621	10,068	4,638	8,392	8,950
14. Musical instruments .....	10	31	105	47	19	85
15. Miscellaneous .....	140	2,081	6,405	4,774	9,110	9,671
Total classes 1-15 .....	6,188	116,440	657,508	293,391	765,668	549,603
16. Heat, light and power .....	34	1,780	109,802	5,715	13,728	14,161
Total all classes .....	6,222	118,220	767,310	299,105	779,396	563,764

(a) Average employment for whole year; includes working proprietors.

(b) Excludes drawings by working proprietors.

The 'Industrial metals, machines, conveyances' class accounted for 54 per cent of total production and 59 per cent of employment: the next highest class, viz 'Food, drink and tobacco' represented 12 per cent and 10 per cent respectively.

The following table records the number of factories in each industrial class for recent years.

## Number of Factories by Class of Industry, South Australia

Industrial Class	1962-63	1963-64	1964-65	1965-66	1966-67
1. Treatment of non-metalliferous mine and quarry products .....	182	192	194	206	208
2. Bricks, pottery, glass, etc. ....	80	76	78	73	71
3. Chemicals, dyes, explosives, paints, oils, grease .....	97	100	104	106	110
4. Industrial metals, machines, conveyances .....	2,781	2,841	2,889	3,051	3,190
5. Precious metals, jewellery, plate ...	169	174	171	171	177
6. Textile and textile goods (not dress)	58	57	58	60	65
7. Skins and leather (not clothing or footwear) .....	40	38	36	40	40
8. Clothing (except knitted) .....	594	573	555	539	519
9. Food, drink and tobacco .....	744	737	755	743	739
10. Sawmills, joinery, boxes, etc., wood turning and carving .....	409	413	436	451	452
11. Furniture of wood, bedding, etc. ...	218	221	201	211	216
12. Paper, stationery, printing, book-binding, etc. ....	197	193	194	192	195
13. Rubber .....	57	59	59	58	56
14. Musical instruments .....	11	11	11	10	10
15. Miscellaneous .....	96	108	115	120	140
Total classes 1-15 .....	5,733	5,793	5,856	6,031	6,188
16. Heat, light and power .....	33	33	31	34	34
Total all classes .....	5,766	5,826	5,887	6,065	6,222

Although there were 6,222 factories operating in 1966-67, only 165 or 2.6 per cent had an average employment in excess of 100 persons while 4,705 factories, or 76 per cent of the total employed ten persons or less. In the following table factories are grouped according to the average number of persons employed during the period of operation. The top section of the table shows the number of factories in each size grouping, and the lower section the number of persons employed in the factories located in the groups. Where a manufacturer operates at more than one location each factory premises is recorded separately.

## Number of Factories and Persons Employed by Size of Factory, South Australia

Year	Size of Factory (i.e. Average Employment)							Total
	Under 5	5-10	11-20	21-50	51-100	101-500	Over 500	
NUMBER OF FACTORIES								
1962-63	3,165	1,228	621	429	171	127	25	5,766
1963-64	3,143	1,259	636	446	184	130	28	5,826
1964-65	3,205	1,218	650	462	186	138	28	5,887
1965-66	3,380	1,180	681	464	191	142	27	6,065
1966-67	3,490	1,215	687	476	189	140	25	6,222
PERSONS EMPLOYED								
1962-63	6,810	8,531	9,149	13,739	11,819	24,949	30,765	105,762
1963-64	6,772	8,693	9,338	14,062	12,692	25,512	34,079	111,148
1964-65	6,810	8,411	9,557	14,658	13,024	27,344	36,971	116,775
1965-66	6,931	8,116	9,965	14,959	13,437	28,950	36,390	118,748
1966-67	7,285	8,369	10,060	15,138	13,530	28,761	35,676	118,819

In 1966-67 the twenty-five largest firms were responsible for 30 per cent of total factory employment. By contrast the 3,490 factories employing less than five persons, while constituting 56 per cent of total factories, accounted for only 6 per cent of employment, including a considerable proportion of working proprietors.

Factories operating during 1966-67 are classified by size of establishment for each industrial class in the next table.

**Factories by Persons Employed, South Australia  
1966-67**

Industrial Class	Average Employment							Total
	Under 5	5-10	11-20	21-50	51-100	101-500	Over 500	
1. Treatment of non-metaliferous mine and quarry products .....	116	51	16	16	4	5	—	208
2. Bricks, pottery, glass, etc. ....	23	13	14	9	9	3	—	71
3. Chemicals, dyes, explosives, paints, oils, grease .....	53	23	8	11	4	10	1	110
4. Industrial metals, machines, conveyances .....	1,930	607	305	186	82	62	18	3,190
5. Precious metals, jewellery, plate .....	144	23	6	4	—	—	—	177
6. Textile and textile goods (not dress) .....	25	10	11	9	6	3	1	65
7. Skins and leather (not clothing or footwear) .....	19	10	5	3	1	1	1	40
8. Clothing (except knitted) .....	322	91	45	42	12	7	—	519
9. Food, drink and tobacco .....	307	170	119	86	37	20	—	739
10. Sawmills, joinery, boxes etc., wood turning and carving .....	239	92	59	38	13	11	—	452
11. Furniture of wood, bedding, etc. ....	119	37	32	23	2	3	—	216
12. Paper, stationery, printing, book-binding, etc. ....	52	53	38	31	13	7	1	195
13. Rubber .....	37	5	7	3	1	2	1	56
14. Musical instruments .....	8	2	—	—	—	—	—	10
15. Miscellaneous .....	73	25	21	14	3	4	—	140
Total classes 1-15 .....	3,467	1,212	686	475	187	138	23	6,188
16. Heat, light and power .....	23	3	1	1	2	2	2	34
Total all classes .....	3,490	1,215	687	476	189	140	25	6,222

In 1965-66 factories employing less than five persons included 1,093 motor repair workshops, 224 motor body workshops, 158 bakeries, 143 boot and shoe repairers and 182 joineries.

### EMPLOYMENT IN FACTORIES

In 1931-32, at the height of the depression, average factory employment in South Australia was 23,830. By 1938-39 it had passed the previous peak of 41,075 reached in 1926-27 and stood at 43,371. There was a rapid increase in the factory work force in the early years of the 1939-45 War and a new peak of 72,751 was reached in 1942-43, after which it declined for the remaining war years. Since the war the employment level has shown an increase in all but four years to reach the level of 118,343 recorded in 1965-66. There was a slight decline to 118,220 in 1966-67.

The factory work force in 1966-67 represented 10.7 per cent of the total population compared with 10.0 per cent in 1945-46 and 7.3 per cent in 1938-39. Details of factory employment for each year since 1911 are given in the Statistical Summary on page 604.

A breakdown of the factory work force by sex and age is given in the following table for five selected post-war years and for 1939. The most noticeable variation in composition is the considerable drop in the relative contribution of persons under twenty-one years to the total force between 1939 and the early post-war years.

**Factory Employees by Age and Sex, South Australia**  
(Excludes working proprietors)

At 30 June	Males			Females			Total Employees
	Under 21 Years	21 Years and Over	Total	Under 21 Years	21 Years and Over	Total	
NUMBER OF EMPLOYEES							
1939.....	7,146	25,672	32,818	4,140	3,657	7,797	40,615
1950.....	5,850	57,909	63,759	4,049	11,357	15,406	79,165
1955.....	6,338	65,532	71,870	3,951	11,573	15,524	87,394
1960.....	7,989	71,567	79,556	4,722	12,935	17,657	97,213
1965.....	10,671	82,621	93,292	6,183	15,065	21,248	114,540
1967.....	10,952	81,681	92,633	5,580	15,641	21,221	113,854
PERCENTAGE OF TOTAL EMPLOYEES							
1939.....	17.6	63.2	80.8	10.2	9.0	19.2	100.0
1950.....	7.4	73.1	80.5	5.1	14.4	19.5	100.0
1955.....	7.2	75.0	82.2	4.5	13.3	17.8	100.0
1960.....	8.2	73.6	81.8	4.9	13.3	18.2	100.0
1965.....	9.3	72.2	81.5	5.4	13.1	18.5	100.0
1967.....	9.6	71.8	81.4	4.9	13.7	18.6	100.0

Although the trend in total factory employment in the post-war period has been that of a steady increase, employment trends in individual industries have varied considerably. In the following table factory employment over the last five years is classified by industrial class. Class 4, which includes the motor vehicle, electrical goods and household appliance industries, has accounted for 75 per cent of the post-war increase in factory employment. In the six years immediately after the war, employment in this class increased 23 per cent and in the six years to 1966-67 has increased 26 per cent. Employment in Class 1, which includes the portland cement industry and the production of other materials consumed in the post-war building boom, increased 114 per cent between 1946-47 and 1966-67; other industrial classes have recorded lesser rates of growth.

**Factory Employment, South Australia**  
*Average number of persons employed during the year*

Industrial Class	1962-63	1963-64	1964-65	1965-66	1966-67
1. Treatment of non-metalliferous mine and quarry products .....	2,282	2,325	2,382	2,321	2,305
2. Bricks, pottery, glass, etc. ....	2,225	2,203	2,264	2,277	2,117
3. Chemicals, dyes, explosives, paints, oils, grease ....	2,944	3,215	3,244	3,296	3,298
4. Industrial metals, machines, conveyances .....	60,470	64,479	68,516	69,592	69,321
5. Precious metals, jewellery, plate .....	539	571	562	549	569
6. Textile and textile goods (not dress) .....	2,533	2,522	2,685	2,807	2,775
7. Skins and leather (not clothing or footwear) .....	1,164	1,203	1,035	1,015	995
8. Clothing (except knitted) .....	5,098	5,312	5,471	5,397	5,351
9. Food, drink and tobacco .....	11,241	11,614	11,914	12,324	12,288
10. Sawmills, joinery, boxes, etc., wood turning and carving .....	5,311	5,457	5,791	5,934	5,789
11. Furniture of wood, bedding, etc. ....	2,191	2,332	2,226	2,301	2,245
12. Paper, stationery, printing, bookbinding, etc. ....	4,868	4,986	5,178	5,452	5,654
13. Rubber .....	1,148	1,248	1,328	1,515	1,621
14. Musical instruments .....	32	32	34	30	31
15. Miscellaneous .....	1,256	1,381	1,621	1,769	2,081
Total classes 1-15 .....	103,302	108,880	114,251	116,579	116,440
16. Heat, light and power .....	1,963	1,933	1,932	1,764	1,780
Total all classes .....	105,265	110,813	116,183	118,343	118,220

By contrast employment in Classes 7 and 8 has declined in the post-war era, and in Class 6 it has been steady except for three years in the early 1950s when activity in cotton spinning and weaving was curtailed.

Further details of persons employed in factories during 1966-67 are given in the following table. In that year females constituted 18.7 per cent of the total work force, but industries traditionally associated with female employment had a much higher component, as was the case of Class 8 where females constituted 67.8 per cent of the work force, and Classes 6 and 9 with 54.2 per cent and 34.4 per cent respectively.

### Factory Employees by Nature of Employment, South Australia

*Average number of persons employed during 1966-67*

Industrial Class	Working Proprietors	Managerial and Clerical Staff	Technical Staff (a)	All Other	Total Employees		
					Males	Females	Persons
1. Treatment of non-metalliferous mine and quarry products .....	84	424	53	1,744	2,159	146	2,305
2. Bricks, pottery, glass, etc. ....	22	301	10	1,784	1,922	195	2,117
3. Chemicals, dyes, explosives, paints, oils, grease .....	33	576	191	2,498	2,798	500	3,298
4. Industrial metals, machines, conveyances .....	2,071	9,360	1,756	56,134	61,165	8,156	69,321
5. Precious metals, jewellery, plate .....	161	67	—	341	486	83	569
6. Textile and textile goods (not dress) .....	36	234	22	2,483	1,270	1,505	2,775
7. Skins and leather (not clothing or footwear) .....	30	133	18	814	854	141	995
8. Clothing (except knitted) .....	443	399	—	4,509	1,724	3,627	5,351
9. Food, drink and tobacco .....	454	1,869	179	9,786	8,067	4,221	12,288
10. Sawmills, joinery, boxes, etc., wood turning and carving .....	292	681	17	4,799	5,334	455	5,789
11. Furniture of wood, bedding, etc. ....	173	228	1	1,843	1,717	528	2,245
12. Paper, stationery, printing, book-binding, etc. ....	116	957	26	4,555	4,229	1,425	5,654
13. Rubber .....	7	314	43	1,257	1,338	283	1,621
14. Musical instruments .....	8	2	—	21	31	—	31
15. Miscellaneous .....	90	284	28	1,679	1,228	853	2,081
Total classes 1-15 .....	4,020	15,829	2,344	94,247	94,322	22,118	116,440
16. Heat, light and power .....	6	98	21	1,655	1,754	26	1,780
Total all classes .....	4,026	15,927	2,365	95,902	96,076	22,144	118,220

(a) Chemists, draftsmen, and other laboratory and research staff.

A relatively greater number of working proprietors are naturally found in classes which embrace the smaller manufacturing unit. For example, of the 4,026 working proprietors shown for 1966-67, 1,406 operated motor repair and motor body workshops, while others were associated with engineering workshops, bakeries, joineries, cabinet-making, printing, tailoring, shoe repairing, upholstery, and the jewellery trade.

### SALARIES, WAGES, AND OTHER COSTS

The following table shows aggregate and average wages and salaries paid over the last ten years. Working proprietors and their drawings have been excluded.

In 1946-47, the average of wages and salaries per employee was \$597; however, this figure had doubled by 1951-52 when it stood at \$1,313, and by 1966-67 had



reached \$2,619, over four times the 1946-47 rate. A comparison of the male and female rates shows little variation over the period with the female rate being 52 per cent of the male rate for 1966-67.

### Factories: Salaries and Wages Paid, South Australia

Year	Salaries and Wages Paid			Average Per Employee		
	Males	Females	Persons	Males	Females	Persons
	\$'000	\$'000	\$'000	\$	\$	\$
1957-58	142,305	17,385	159,689	1,941	1,073	1,784
1958-59	148,536	17,754	166,290	1,985	1,087	1,824
1959-60	170,666	19,809	190,475	2,176	1,151	1,992
1960-61	177,245	20,720	197,965	2,250	1,184	2,057
1961-62	178,771	20,291	199,062	2,281	1,220	2,095
1962-63	197,821	22,246	220,067	2,377	1,240	2,175
1963-64	215,127	25,188	240,315	2,457	1,312	2,251
1964-65	245,566	28,659	274,225	2,689	1,372	2,444
1965-66	252,260	30,691	282,951	2,720	1,420	2,474
1966-67	266,640	32,466	299,105	2,880	1,502	2,619

Salaries and wages paid to the factory work force during 1966-67 are shown separately for each industrial class in the next table.

### Factories: Salaries and Wages Paid<sup>(a)</sup>, South Australia 1966-67

Industrial Class	Salaries and Wages Paid			Average per Employee		
	Males	Females	Persons	Males	Females	Persons
	\$'000	\$'000	\$'000	\$	\$	\$
1. Treatment of non-metalliferous mine and quarry products	6,343	217	6,560	3,043	1,587	2,954
2. Bricks, pottery, glass, etc.	5,360	324	5,684	2,820	1,670	2,713
3. Chemicals, dyes, explosives, paints, oils, grease	8,845	795	9,640	3,193	1,606	2,953
4. Industrial metals, machines, conveyances	171,540	12,575	184,115	2,895	1,574	2,738
5. Precious metals, jewellery, plate	893	100	993	2,643	1,428	2,435
6. Textile and textile goods (not dress)	3,723	2,296	6,019	2,988	1,538	2,198
7. Skins and leather (not clothing or footwear)	2,436	179	2,614	2,934	1,323	2,709
8. Clothing (except knitted)	3,801	4,735	8,536	2,685	1,356	1,739
9. Food, drink and tobacco	22,111	6,243	28,354	2,866	1,516	2,396
10. Sawmills, joinery, boxes, etc., wood turning and carving	12,010	618	12,628	2,375	1,401	2,297
11. Furniture of wood, bedding, etc.	3,617	704	4,321	2,308	1,394	2,086
12. Paper, stationery, printing, book-binding, etc.	12,480	1,985	14,465	3,019	1,414	2,612
13. Rubber	4,161	477	4,638	3,126	1,686	2,874
14. Musical instruments	47	—	47	2,026	—	2,026
15. Miscellaneous	3,597	1,177	4,774	3,098	1,418	2,398
Total classes 1-15	260,965	32,426	293,391	2,873	1,502	2,610
16. Heat, light and power	5,675	40	5,715	3,246	1,536	3,221
Total all classes	266,640	32,466	299,105	2,880	1,502	2,619

(a) Excludes drawings by working proprietors.

Other major production costs for 1966-67 are listed in the following table.

**Factories: Cost of Materials, Fuel, Light, Etc., Used, South Australia  
1966-67**

Industrial Class	Materials Used	Non- returnable Con- tainers, Etc.	Tools Replaced, Repairs, Etc.	Power, Fuel, Light, Lubricat- ing Oil and Water	Total
	\$'000				
1. Treatment of non-metaliferous mine and quarry products .....	16,059	633	1,517	2,243	20,453
2. Bricks, pottery, glass, etc. ....	4,888	71	853	1,756	7,568
3. Chemicals, dyes, explosives, paints, oils, grease ...	56,636	3,647	2,062	4,724	67,069
4. Industrial metals, machines, conveyances .....	385,393	2,990	14,481	24,102	426,966
5. Precious metals, jewellery, plate .....	821	8	39	108	977
6. Textile and textile goods (not dress) .....	10,920	328	389	491	12,129
7. Skins and leather (not clothing or footwear) .....	10,365	47	479	271	11,162
8. Clothing (except knitted) .....	9,157	273	249	335	10,014
9. Food, drink and tobacco .....	104,795	18,689	2,892	3,333	129,709
10. Sawmills, joinery, boxes, etc., wood turning and carving .....	25,860	115	868	889	27,732
11. Furniture of wood, bedding, etc. ....	8,370	32	126	110	8,638
12. Paper, stationery, printing, bookbinding, etc. ....	22,398	267	1,151	1,915	25,730
13. Rubber .....	7,380	146	301	566	8,392
14. Musical instruments .....	17	—	1	1	19
15. Miscellaneous .....	8,336	340	174	261	9,110
Total classes 1-15 .....	671,395	27,587	25,581	41,106	765,668
16. Heat, light and power .....	2,554	—	977	10,196	13,728
Total all classes .....	673,949	27,587	26,558	51,302	779,396

The following table reflects the changing pattern of fuel usage in factories in recent years. The values of coal and wood used have declined, however those for gas, fuel oils, electricity and coke have increased by 197 per cent, 79 per cent, 45 per cent and 141 per cent respectively during the period from 1962-63 to 1966-67.

**Fuel<sup>(a)</sup> and Power Used in Factories, South Australia**

Fuel	1962-63	1963-64	1964-65	1965-66	1966-67
	\$'000				
Coal .....	9,374	9,428	9,543	9,008	8,471
Coke .....	4,890	4,570	4,895	6,691	11,797
Wood .....	728	747	648	582	522
Fuel oils (b) .....	6,617	7,788	9,246	10,575	11,858
Gas .....	595	650	703	967	1,770
Electricity .....	9,970	11,212	12,555	13,794	14,505

(a) Includes value of coal and oil used as materials. (b) Includes tar fuel.

The contribution of the various specified costs of production to the total value of output is summarised in the following table.

**Factories: Costs and Output, South Australia**

Year	Salaries and Wages	Costs of Production		Value of Output
		Materials Used	Other (a)	
		\$'000		
1962-63 .....	220,067	466,238	68,694	914,074
1963-64 .....	240,315	558,884	75,547	1,061,786
1964-65 .....	274,225	620,682	87,560	1,206,830
1965-66 .....	282,951	647,311	95,751	1,270,539
1966-67 .....	299,105	673,949	105,447	1,343,160

(a) Includes containers, tools replaced, repairs, power and fuel used, lubricants and water.

The difference between the specified costs and the total value of output includes all other costs and overhead expenses such as rent, interest, payroll and company taxation, and depreciation, as well as profits and drawings by working proprietors.

There is considerable variation in the importance of certain costs as between industrial classes. In the table below the various costs are expressed as a percentage of the value of output.

**Factories: Costs as Percentage of Output, South Australia  
1966-67**

Industrial Class	Salaries and Wages	Costs of Production	
		Materials Used	Other (a)
		Per Cent	
1. Treatment of non-metalliferous mine and quarry products.....	17.2	42.0	11.5
2. Bricks, pottery, glass, etc.....	30.9	26.5	14.6
3. Chemicals, dyes, explosives, paints, oils, grease	9.0	53.0	9.8
4. Industrial metals, machines, conveyances....	25.1	52.6	5.7
5. Precious metals, jewellery, plate.....	34.2	28.3	5.3
6. Textile and textile goods (not dress).....	25.5	46.3	5.1
7. Skins and leather (not clothing or footwear)..	17.7	70.1	5.4
8. Clothing (except knitted).....	34.3	36.8	3.4
9. Food, drink and tobacco.....	14.4	54.2	12.7
10. Sawmills, joinery, boxes, etc., wood turning and carving.....	24.8	50.7	3.7
11. Furniture of wood, bedding, etc.....	26.0	50.3	1.6
12. Paper, stationery, printing, bookbinding, etc..	26.9	41.6	6.2
13. Rubber.....	26.7	42.6	5.8
14. Musical instruments.....	44.9	16.5	2.0
15. Miscellaneous.....	25.4	44.4	4.1
Total classes 1-15.....	22.3	51.1	7.2
16. Heat, light and power.....	20.5	9.2	40.1
Total all classes.....	22.2	50.2	7.8

(a) Includes containers, tools replaced, repairs, power and fuel used, lubricants and water.

### VALUE OF OUTPUT AND PRODUCTION

A common measure of factory activity is that of value of output, this being the value of goods manufactured, plus amounts received for repairs and for work done on commission.

In the years immediately following the 1914-18 War the annual value of factory output was approximately \$40 million. After reaching a peak of \$74 million in 1926-27 output declined with a low point of \$39 million occurring in the depression year 1931-32. War time output showed some increase, but it was not until after the 1939-45 War that the value of factory output began to rise rapidly. Early rises which involved a trebling of output between 1945-46 and 1951-52 were, however, largely attributable to a rising price structure. Steadier prices after 1952-53 suggest that a substantial part of the increase from this date represented an increase in physical output. The value of output exceeded \$600 million in 1955-56, \$800 million in 1960-61 and \$1,300 million in 1966-67.

A division by industrial classes of the value of factory output for the years 1962-63 to 1966-67 is given below.

### Value of Factory Output, South Australia

Industrial Class	1962-63	1963-64	1964-65	1965-66	1966-67
	\$'000				
1. Treatment of non-metalliferous mine and quarry products .....	30,298	35,735	39,222	39,480	38,200
2. Bricks, pottery, glass, etc. ....	17,258	18,620	20,285	19,398	18,416
3. Chemicals, dyes, explosives, paints, oils, grease... ..	51,546	70,808	87,056	97,087	106,921
4. Industrial metals, machines, conveyances .....	483,490	570,409	659,335	702,230	733,368
5. Precious metals, jewellery, plate .....	2,350	2,648	3,090	2,739	2,907
6. Textile and textile goods (not dress) .....	17,709	19,812	22,649	21,538	23,590
7. Skins and leather (not clothing or footwear) .....	17,437	18,580	15,730	14,644	14,777
8. Clothing (except knitted) .....	18,825	20,617	21,837	22,209	24,854
9. Food, drink and tobacco .....	137,498	151,230	167,087	175,135	194,624
10. Sawmills, joinery, boxes, etc., wood turning and carving .....	42,744	46,027	53,168	52,531	50,961
11. Furniture of wood, bedding, etc. ....	14,124	15,957	15,991	16,455	16,648
12. Paper, stationery, printing, bookbinding, etc. ....	36,762	41,495	45,055	49,675	53,778
13. Rubber .....	10,461	11,969	13,215	15,582	17,342
14. Musical instruments .....	109	114	112	99	104
15. Miscellaneous .....	8,240	10,421	12,950	13,519	18,781
Total classes 1-15 .....	888,851	1,034,440	1,176,783	1,242,321	1,315,272
16. Heat, light and power .....	25,223	27,346	30,047	28,218	27,889
Total all classes .....	914,074	1,061,786	1,206,830	1,270,539	1,343,160

Value of production, *i.e.* the value added to raw materials by factory production, is useful both as a guide to the growth of secondary industry and as a measure of the relative contribution of the various industrial classes to total production.

Factory production has increased markedly since the 1939-45 War. However, when considering the statistics of value of production given in the next table, it should be borne in mind that prices and costs have risen substantially in the post-war period.

### Value of Factory Production, South Australia

1925-26 to 1966-67

Period	Total Production	Production Per Employee	Production Per Head of Population
	\$'000	\$	\$
Annual Average :			
1925-26 to 1929-30 .....	25,345	701	44
1930-31 to 1934-35 .....	16,308	625	28
1935-36 to 1939-40 .....	26,338	646	44
1940-41 to 1944-45 .....	50,210	794	82
1945-46 to 1949-50 .....	76,565	1,089	116
1950-51 to 1954-55 .....	180,598	2,202	238
1955-56 to 1959-60 .....	273,508	3,003	309
1960-61 to 1964-65 .....	398,608	3,897	397
Year :			
1962-63 .....	379,142	3,748	381
1963-64 .....	427,356	4,003	419
1964-65 .....	498,588	4,444	475
1965-66 .....	527,477	4,612	489
1966-67 .....	563,764	4,937	511

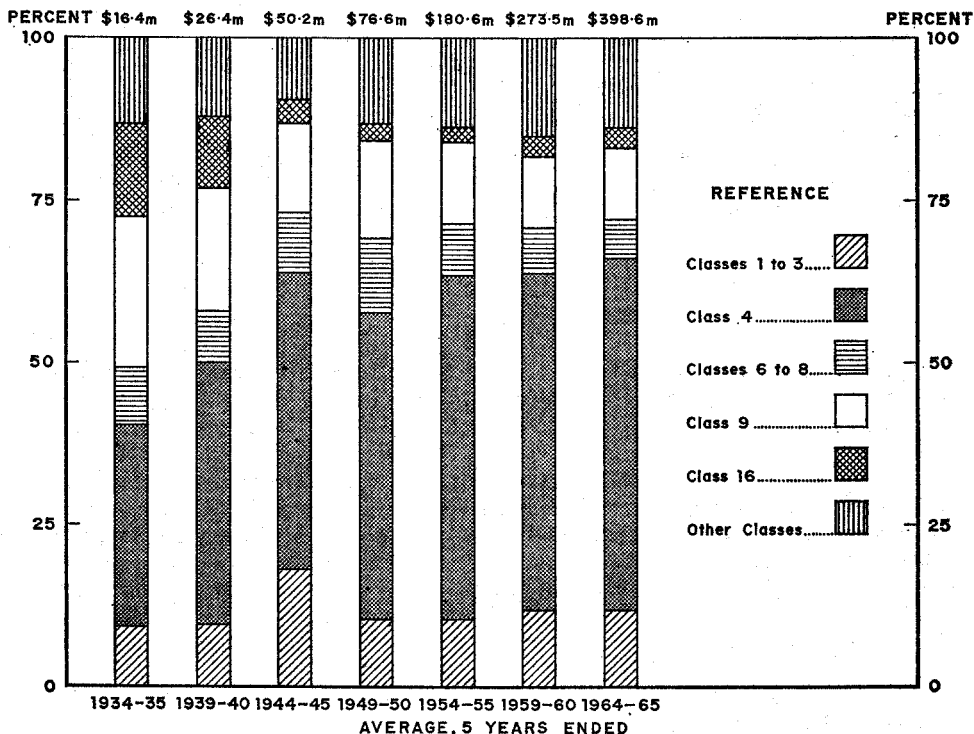
The contribution of each industrial class to total factory production in the last five years is shown below.

### Value of Factory Production, South Australia

Industrial Class	1962-63	1963-64	1964-65	1965-66	1966-67
	\$'000				
1. Treatment of non-metalliferous mine and quarry products .....	14,729	16,766	17,952	17,807	17,747
2. Bricks, pottery, glass, etc. ....	9,698	10,650	11,575	11,115	10,848
3. Chemicals, dyes, explosives, paints, oils, grease. ....	20,694	26,420	33,116	35,263	39,852
4. Industrial metals, machines, conveyances .....	203,585	226,582	273,902	294,482	306,402
5. Precious metals, jewellery, plate .....	1,618	1,690	1,950	1,807	1,930
6. Textile and textile goods (not dress) .....	7,696	8,439	9,698	9,796	11,461
7. Skins and leather (not clothing or footwear) .....	3,441	3,595	3,564	3,954	3,615
8. Clothing (except knitted) .....	11,013	11,749	12,162	12,965	14,840
9. Food, drink and tobacco .....	41,401	46,860	52,765	55,691	64,916
10. Sawmills, joinery, boxes, etc., wood turning and carving .....	16,904	19,079	22,023	23,012	23,229
11. Furniture of wood, bedding, etc. ....	6,521	7,152	7,173	7,696	8,010
12. Paper, stationery, printing, bookbinding, etc. ....	19,311	21,709	23,561	25,939	28,048
13. Rubber .....	5,579	6,646	6,799	6,996	8,950
14. Musical instruments .....	89	90	86	79	85
15. Miscellaneous .....	4,103	5,423	6,701	7,189	9,671
Total classes 1-15 .....	366,384	412,849	483,028	513,791	549,603
16. Heat, light and power .....	12,758	14,507	15,560	13,687	14,161
Total all classes .....	379,142	427,356	498,588	527,477	563,764

The relative importance of certain classes, and groups of classes, for earlier years is illustrated in the following bar chart.

### NET VALUE OF FACTORY PRODUCTION (PROPORTION OF MAJOR CLASSES TO TOTAL)



## FACTORY PREMISES AND EQUIPMENT

In the following tables values are given for land and buildings, and plant and machinery used in manufacturing pursuits. Where the premises and equipment are the property of the occupier the values are the depreciated values or book values existing in respect of them. Where premises or equipment are rented the value has been estimated by capitalising the annual rental for fifteen years in the case of land and buildings, and ten years for plant and machinery. The values below are accordingly not synonymous with total investment in industrial premises and equipment.

The value of productive factory premises at 30 June for the years 1963 to 1967 is given in the following table.

## Factories: Value of Land and Buildings, South Australia

At 30 June

Industrial Class	1963	1964	1965	1966	1967
	\$'000				
1. Treatment of non-metalliferous mine and quarry products .....	6,986	7,118	8,635	9,120	10,317
2. Bricks, pottery, glass, etc. ....	3,927	4,437	5,350	5,390	5,806
3. Chemicals, dyes, explosives, paints, oils, grease ..	9,640	9,909	9,794	10,039	10,604
4. Industrial metals, machines, conveyances .....	101,428	112,389	129,919	145,884	153,568
5. Precious metals, jewellery, plate .....	1,238	1,442	1,450	1,416	1,483
6. Textile and textile goods (not dress) .....	3,744	4,164	4,246	4,374	4,658
7. Skins and leather (not clothing or footwear) .....	1,440	1,524	1,390	1,332	1,385
8. Clothing (except knitted) .....	6,764	6,534	6,731	7,337	7,535
9. Food, drink and tobacco .....	30,677	33,229	35,633	37,015	38,979
10. Sawmills, joinery, boxes, etc., wood turning and carving .....	8,039	8,479	9,708	10,454	11,191
11. Furniture of wood, bedding, etc. ....	3,434	3,721	3,788	4,265	4,641
12. Paper, stationery, printing, bookbinding, etc. ....	11,736	13,066	13,832	15,889	17,190
13. Rubber .....	2,710	3,498	3,161	4,316	4,166
14. Musical instruments .....	113	104	109	102	95
15. Miscellaneous .....	1,979	2,433	3,032	3,246	3,857
Total classes 1-15 .....	193,859	212,049	236,779	260,179	275,475
16. Heat, light and power .....	19,104	18,579	19,758	16,352	20,876
Total all classes .....	212,963	230,627	256,536	276,531	296,351

The estimated value of factory premises at 30 June 1947 was \$37.4 million of which \$9.6 million, or 26 per cent was for premises in Class 4. By contrast, premises in Class 4 in 1966-67 represented 52 per cent of total estimated value.

The value of plant and machinery employed in the above premises covers all machinery, implements, tools and includes vehicles and plant for the conveyance of raw materials. The total estimated value of plant and machinery employed at 30 June 1947 was \$36.8 million, a little less than 8 per cent of the value at 30 June 1967—\$471 million. Most of the plant and machinery is used in Class 4 (with 49 per cent of the total value in 1967 compared with 29 per cent in 1947) and Class 16 (18 per cent in 1967 compared with 25 per cent in 1947).

The value of plant and machinery at 30 June for the years 1963 to 1967 is shown in the following table.

**Factories: Value of Plant and Machinery, South Australia***At 30 June*

Industrial Class	1963	1964	1965	1966	1967
	\$'000				
1. Treatment of non-metalliferous mine and quarry products	14,610	14,346	14,606	17,783	18,021
2. Bricks, pottery, glass, etc.	3,679	4,766	6,728	8,539	7,569
3. Chemicals, dyes, explosives, paints, oils, grease	36,623	35,572	34,549	35,542	34,565
4. Industrial metals, machines, conveyances	107,629	139,662	186,133	207,816	230,776
5. Precious metals, jewellery, plate	326	333	427	415	480
6. Textile and textile goods (not dress)	4,040	4,636	4,239	4,606	4,244
7. Skins and leather (not clothing or footwear)	858	982	1,099	1,121	1,313
8. Clothing (except knitted)	2,617	2,897	3,317	3,629	3,789
9. Food, drink and tobacco	24,381	25,375	26,825	28,245	30,423
10. Sawmills, joinery, boxes, etc., wood turning and carving	8,302	8,324	9,373	9,298	9,610
11. Furniture of wood, bedding, etc.	1,137	1,320	1,261	1,284	1,326
12. Paper, stationery, printing, bookbinding, etc.	16,718	17,948	20,037	25,667	31,457
13. Rubber	1,356	2,037	1,603	6,683	5,902
14. Musical instruments	27	41	45	38	9
15. Miscellaneous	1,419	1,413	1,844	2,114	2,549
Total classes 1-15	223,722	259,692	312,085	352,779	382,033
16. Heat, light and power	69,886	70,589	76,847	70,679	88,926
Total all classes	293,608	330,281	388,932	423,458	470,959

Some indication of the mechanisation of each industrial class can be obtained by relating plant and machinery to persons employed.

In the following table an average of the values of plant and machinery employed at the beginning and the end of each year is divided by the average employment for that year.

**Value of Plant and Machinery Per Person Employed, South Australia**

Industrial Class	1962-63	1963-64	1964-65	1965-66	1966-67
	\$				
1. Treatment of non-metalliferous mine and quarry products	6,670	6,227	6,077	6,977	7,767
2. Bricks, pottery, glass, etc.	1,501	1,916	2,538	3,352	3,804
3. Chemicals, dyes, explosives, paints, oils, grease	9,212	11,228	10,808	10,633	10,629
4. Industrial metals, machines, conveyances	1,656	1,918	2,378	2,830	3,163
5. Precious metals, jewellery, plate	545	594	694	767	786
6. Textile and textile goods (not dress)	1,582	1,724	1,656	1,576	1,595
7. Skins and leather (not clothing or footwear)	708	765	1,005	1,094	1,223
8. Clothing (except knitted)	511	519	568	644	693
9. Food, drink and tobacco	2,106	2,142	2,191	2,234	2,387
10. Sawmills, joinery, boxes, etc., wood turning and carving	1,629	1,523	1,528	1,573	1,633
11. Furniture of wood, bedding, etc.	497	527	580	553	581
12. Paper, stationery, printing, bookbinding, etc.	3,123	3,476	3,668	4,191	5,052
13. Rubber	1,196	1,360	1,370	2,735	3,882
14. Musical instruments	813	1,063	1,262	1,377	751
15. Miscellaneous	1,021	1,025	1,005	1,119	1,120
Total classes 1-15	1,983	2,220	2,502	2,852	3,155
16. Heat, light and power	34,874	36,336	38,156	41,816	44,833
Total all classes	2,596	2,815	3,095	3,432	3,783

Details of additions to factory premises and equipment are recorded each year. These figures provide a guide to new investment in premises and equipment but also include the value of secondhand assets purchased by manufacturers. Where a major construction programme is involved the total value of the asset is

generally recorded when the premises are brought into production even though construction may have been spread over a number of years.

### Additions to Factory Premises and Equipment, South Australia

Year	Industrial Metals, Machines, and Conveyances	Food, Drink and Tobacco	Paper, Stationery, Printing, Book-binding	Heat, Light and Power	Other Classes of Industry	Total
LAND AND BUILDINGS: \$'000						
1962-63 .....	9,343	1,626	1,239	609	3,441	16,258
1963-64 .....	13,947	1,972	1,681	128	3,601	21,329
1964-65 .....	19,800	2,800	950	975	4,711	29,236
1965-66 .....	13,837	2,356	1,969	653	3,717	22,532
1966-67 .....	10,888	2,112	846	5,499	3,926	23,271
PLANT AND MACHINERY: \$'000						
1962-63 .....	26,791	3,618	4,762	4,647	26,151	65,969
1963-64 .....	48,906	4,403	2,797	4,199	9,090	69,395
1964-65 .....	58,133	4,367	4,003	6,295	11,701	84,499
1965-66 .....	42,586	5,008	6,935	447	18,473	73,449
1966-67 .....	49,872	5,804	6,363	24,643	9,501	96,183

Statistics of motive power available in factories are given in the two following tables. In the first table, plant installed in electricity generating stations has been separated from that installed in other factories. The figures for generating stations refer to the 'rated capacity' of engines and generators installed, and for other factories to the 'rated horsepower' of engines ordinarily in use and of engines in reserve or idle. Obsolete engines are excluded altogether.

### Engines and Electric Motors in Factories, South Australia

#### Rated horsepower of engines

Year	Ordinarily in Use						In Reserve or Idle	
	Steam	Internal Combustion			Driven by Electricity			Total (b)
		Gas (a)	Light Oil (a)	Heavy Oil (a)	Purchased	Own Generation		
IN ELECTRICITY GENERATING STATIONS								
1962-63 .....	800,200	—	4,404	13,559	—	66,871	818,163	—
1963-64 .....	877,900	—	5,998	11,833	—	n.a.	895,731	—
1964-65 .....	944,900	—	7,609	9,853	—	74,725	962,362	—
1965-66 .....	904,200	20,614			—	69,796	924,814	—
1966-67 .....	1,064,900	21,401			—	89,283	1,086,301	—
IN OTHER FACTORIES								
1962-63 .....	20,527	688	9,275	3,273	465,366	23,221	499,129	62,991
1963-64 .....	19,346	393	10,113	1,487	529,262	21,672	560,601	63,452
1964-65 .....	19,211	403	9,967	1,677	605,300	24,775	636,558	63,207
1965-66 .....	(c) 60,064	11,262			656,699	32,019	728,025	62,317
1966-67 .....	(c) 60,111	10,754			705,858	30,721	776,723	63,659

(a) From 1965-66 no longer collected separately.

(b) Excludes motors driven by electricity of own generation, to avoid duplication.

(c) Includes one factory previously classified as electricity generating station.

n.a.—Not available.



Motive power in factories has naturally increased with post-war industrialisation. The electricity generating industry has had to help meet these increased demands from secondary industry as well as accommodate the domestic requirements of a rapidly expanding population, and at the same time expand its services into previously unserved areas. In 1946-47 comparable figures to those shown in the preceding table were 228,483 horsepower installed in generating stations and 205,132 horsepower, including that of engines in reserve or idle, in other factories.

The distribution of motive power in factories, other than electricity generating stations, between the various industrial classes is shown in the following table.

**Engines and Electric Motors<sup>(a)</sup> in Factories Other than Electric Generating Stations, South Australia**

Industrial Class	1962-63	1963-64	1964-65	1965-66	1966-67
	Horsepower				
1. Treatment of non-metalliferous mine and quarry products .....	42,488	47,574	49,383	55,731	57,001
2. Bricks, pottery, glass, etc. ....	13,487	15,164	18,435	22,028	21,844
3. Chemicals, dyes, explosives, paints, oils, grease. ....	49,356	53,203	54,099	54,520	56,197
4. Industrial metals, machines, conveyances .....	234,533	281,545	339,856	404,814	437,212
5. Precious metals, jewellery, plate .....	2,381	1,277	1,353	1,267	1,338
6. Textile and textile goods (not dress) .....	9,810	9,916	10,047	10,374	10,478
7. Skins and leather (not clothing or footwear) .....	7,275	7,442	7,476	6,689	7,581
8. Clothing (except knitted) .....	4,709	4,805	4,897	5,673	5,760
9. Food, drink and tobacco .....	77,786	79,831	82,221	85,803	87,289
10. Sawmills, joinery, boxes, etc., wood turning and carving .....	62,873	63,863	68,520	68,612	70,365
11. Furniture of wood, bedding, etc. ....	7,461	7,800	6,911	7,915	7,837
12. Paper, stationery, printing, bookbinding, etc. ....	29,870	31,144	33,583	34,860	42,922
13. Rubber .....	8,836	10,033	11,201	19,679	20,220
14. Musical instruments .....	14	14	19	18	18
15. Miscellaneous .....					
16. Heat, light and power (a) .....	11,241	10,442	11,764	12,359	14,320
Total (excluding electricity generating stations)	562,120	624,053	699,765	790,342	840,382

(a) Includes engines and electric motors in reserve or idle, but excludes electric motors driven by electricity generated within the factory.

Further details of electricity generating stations are given on page 465.

**SELECTED FACTORY PRODUCTS**

The factory products listed in this section are not necessarily the principal products produced in this State. Where publication of details of an individual product would enable the output of a particular manufacturer to be determined, these figures are treated as confidential and are not separately available for publication. As a considerable number of products are produced in this State by industries containing one or two dominant firms, the list of publishable items is considerably restricted and the absence of a product from the list does not imply its non-production.

Values shown represent the selling value at the factory excluding delivery costs and charges, and excise duty where applicable.

## Selected Factory Products, South Australia

Item	Unit	Quantity Produced			Value at Factory		
		1964-65	1965-66	1966-67	1964-65	1965-66	1966-67
Aerated and carbonated waters ....	'000 gal	11,526	12,792	13,175	\$'000	\$'000	\$'000
Bacon and ham .....	'000 lb	7,807	8,303	8,897	5,983	6,850	7,178
Bags:							
Hessian (excluding flour and sugar) .....	doz	295,618	440,263	510,436	582	940	1,043
Paper (Bags and packets other than multiwall) .....		—	—	—	1,518	1,450	1,302
Blinds and awnings:							
Metal venetian .....		—	—	—	767	722	551
Canvas (outdoor) .....		—	—	—	425	463	546
Other .....		—	—	—	876	951	1,002
Boxes and cartons, paperboard, etc.		—	—	—	5,800	6,595	7,216
Boxes and cases, wooden (including shooks):							
Fruit cases .....	'000	8,916	8,848	7,910	2,694	2,636	2,467
Other .....		—	—	—	2,646	2,819	3,097
Bread (in terms of 2 lb loaves) ....	'000	77,130	77,973	76,354	9,955	10,328	10,855
Bricks:							
Clay .....	'000	153,153	134,533	114,636	5,987	5,181	4,663
Cement, including blocks .....		—	—	—	3,004	2,588	2,286
Butter .....	ton	7,685	7,214	6,738	5,928	5,416	5,105
Cakes, pastry, pies, etc. ....		—	—	—	8,879	9,548	10,411
Cans and containers, metal .....		—	—	—	3,829	4,019	5,262
Cardigans, pullovers, etc.: Mens and boys .....	doz	11,760	12,661	11,860	668	645	677
Caravans complete .....	No.	909	892	756	1,375	1,452	n.a.
Casks and barrels .....	No.	17,803	n.a.	18,890	392	n.a.	565
Cheese (green weight) .....	ton	17,338	16,197	17,231	9,105	8,415	9,391
Concrete, ready mixed .....	cub yd	815,554	772,519	727,161	7,388	6,991	6,768
Confectionery:							
Chocolate and chocolate coated .....	'000 lb	2,777	3,424	3,661	1,238	1,452	1,623
Other .....	'000 lb	3,285	3,505	3,380	707	756	747
Cordials and syrups (excluding cordial extract) .....	'000 gal	480	665	565	598	796	712
Cycles .....	No.	11,439	10,083	10,567	—	—	—
Electrical apparatus: Regulating, starting and controlling .....		—	—	—	2,033	1,680	2,160
Electric motors .....	No.	n.a.	183,348	193,653	—	—	—
Electricity generated .....	mill kWh	2,863	3,226	3,402	—	—	—
Envelopes .....		—	—	—	661	685	n.a.
Flour, white .....	short ton	157,520	149,102	138,583	—	—	—
Footwear, other than rubber .....	pair	2,008,288	1,895,540	2,234,575	7,587	7,698	9,161
Fruit:							
Canned or bottled .....	'000 lb	81,942	67,412	n.a.	n.a.	n.a.	n.a.
Crystallised and glace .....	'000 lb	n.a.	977	1,503	n.a.	329	516
Furniture:							
Metal furniture and office equipment .....		—	—	—	5,595	5,855	5,473
Wooden (excluding wicker, etc.) .....		—	—	—	9,885	9,542	9,562
Gloves, work .....	doz pair	96,533	97,232	96,969	744	751	851
Lacquers, nitro-cellulose .....	gallon	102,010	93,500	98,671	431	383	381
Machinery:							
Metal working other than machine tools .....		—	—	—	n.a.	5,055	3,256
Conveyors and conveying systems .....		—	—	—	1,806	3,158	1,499
Cranes, hoists, winches, etc. ....		—	—	—	3,523	3,065	2,853
Weighing appliances .....		—	—	—	440	602	494
Mattresses:							
Inner spring .....	No.	77,934	75,309	67,576	1,138	1,124	1,127
Woven wire, spring, etc. ....	No.	54,258	52,952	50,175	n.a.	n.a.	n.a.
Other (including rubber) .....	No.	21,220	20,766	18,228	250	276	267
Medicines, proprietary .....		—	—	—	n.a.	1,876	n.a.
Nails .....	ton	2,743	2,552	2,393	691	655	686
Paints (excluding plastic):							
Architectural and decorative ;							
Primers and undercoats .....	'000 gal	164	149	142	565	549	506
Finishing coats .....	'000 gal	403	360	327	1,885	1,636	1,459
Industrial:							
Finishing coats .....	'000 gal	539	516	537	2,171	2,187	2,172
Paints, plastic .....	'000 gal	381	366	351	1,539	1,596	1,395
Pickles .....	'000 pints	1,327	1,848	n.a.	301	461	n.a.
Pipes and tubes, ferrous (excluding sheet metal) .....	ton	62,434	54,925	47,808	27,027	24,208	23,312
Plaster sheets (a) .....	'000 sq yds	1,147	3,047	2,449	755	1,843	1,415
Refrigeration equipment (excluding drinking water coolers) .....		—	—	—	4,342	4,625	4,978
Sauce, tomato .....	'000 pints	1,844	2,885	n.a.	322	504	n.a.

(a) Figures prior to 1965-66 refer to production of fibrous plaster sheet only.

n.a.—Not available.

## Selected Factory Products, South Australia (continued)

Item	Unit	Quantity Produced			Value at Factory		
		1964-65	1965-66	1966-67	1964-65	1965-66	1966-67
					\$'000	\$'000	\$'000
Soaps and detergents .....	cwt	41,489	51,449	56,117	480	568	743
Springs (including laminated) .....		—	—	—	1,298	1,389	1,476
Steam, gas and water fittings .....		—	—	—	2,361	2,498	2,621
Steel, fabricated, structural .....	ton	51,016	49,468	56,730	13,138	12,570	16,976
Stock and poultry foods, cereal based .....	short ton	n.a.	n.a.	125,710	n.a.	n.a.	8,497
Tallow, inedible .....	'000 lb	17,716	18,596	22,517	1,095	1,151	1,323
Thinners .....	gallon	521,774	467,195	464,308	646	564	508
Timber:							
From local logs:							
Hardwood .....	'000 sup ft	5,430	4,526	3,882	—	—	—
Softwood .....	'000 sup ft	118,514	117,445	110,607	—	—	—
Dressed (excluding floorboards and weatherboards) .....	'000 sup ft	25,279	25,125	25,521	4,255	4,626	4,791
Trailers (excluding low loading) .....	No.	2,180	2,020	2,166	581	599	592
Trailers, semi (excluding low loading) .....	No.	171	150	120	624	518	492
Tyres, retreaded and recapped .....	No.	322,727	335,154	383,775	—	—	—
Vegetables, canned or bottled .....	'000 lb	2,323	2,151	3,058	—	529	730
Water heating systems (including bath, sink and wash boilers)—							
Electric .....	No.	15,488	13,548	12,630	1,118	1,005	961
Gas .....	No.	7,503	6,447	6,355	382	375	348
Window frames, metal .....		—	—	—	2,857	2,769	n.a.
Wines and spirits:							
Beverage wine:							
Fortified .....	'000 gal	7,523	6,451	8,013	—	—	—
Unfortified .....	'000 gal	6,018	5,951	8,137	—	—	—
Distillation wine .....	'000 gal	15,442	12,264	14,336	—	—	—
Spirits distilled:							
Grape spirit .....	pf gal	2,151,294	1,967,709	2,434,602	—	—	—
Brandy .....	pf gal	1,183,331	1,167,309	650,618	—	2,568	1,476

n.a.—Not available.

## GOVERNMENT FACTORIES

Approximately 8 per cent of factory employment in 1966-67 was in government factories, i.e. in manufacturing plants or workshops operated by Commonwealth or State government departments or semi-governmental authorities. Included were electricity generating stations, railway and omnibus workshops, abattoirs, sawmills, and a number of workshops associated with telephone services, water supply, highways and building.

## Government Factories, South Australia

Particulars	1964-65	1965-66	1966-67
Number of factories .....	96	96	103
Average number of employees .....	9,415	9,143	9,407
		\$'000	
Value of land and buildings .....	32,828	29,818	35,539
Value of plant and machinery .....	79,221	75,240	93,441
Salaries and wages paid .....	22,770	23,123	25,209
Materials, fuel and power used .....	28,626	29,636	30,595
Value of production .....	38,890	39,621	42,110

## INDIVIDUAL INDUSTRIES

In this section details are given of major South Australian secondary industries. However, statistics relating to a number of important industries are not available for publication because of the need to maintain confidentiality of details for individual businesses. Where the activities of a factory encompass more than

## PRODUCTION

one industry and the operations of the factory are not statistically divisible all details of the establishment are accredited to the major activity. Statistics for an individual industry may therefore include limited outside activity and may exclude production which is ancillary to other industries.

In the following tables 'Persons Employed' refers to average employment for the whole year; 'Motive Power' to the rated horsepower of engines ordinarily in use, but excluding motors driven by electricity generated within the plant; and 'Value of Premises and Equipment' to book values at the end of each year. Allowance has been made for rent by capitalising the annual rental for fifteen years in the case of land and buildings, and ten years for plant and machinery. The drawings of working proprietors are excluded from 'Salaries and Wages'.

### Cement Products

The post-war building boom resulted in an expansion of the building materials industries. Supported by two producers of portland cement are some eighty-six firms producing a variety of cement products. The output of the cement products industry is largely accounted for by ready mixed concrete, pre-stressed concrete, concrete pipes, modular masonry and cement roofing tiles. In addition considerable quantities of asbestos cement sheeting and pipes are produced each year.

#### Cement Products (Excluding Asbestos Cement), South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	78	1,100	6,109	6,741	2,699	7,258	13,744	6,486
1963-64 .....	85	1,107	6,802	5,996	2,808	8,878	15,618	6,740
1964-65 .....	84	1,127	6,463	6,289	3,118	10,243	17,221	6,978
1965-66 .....	87	1,019	6,884	6,595	2,646	9,879	15,642	5,763
1966-67 .....	86	1,015	7,087	6,376	2,960	9,213	15,436	6,223

### Bricks and Tiles

There are a considerable number of clay brick producers operating in South Australia. The majority of these brickworks are located near Adelaide and in the Adelaide hills, with larger country plants at Nuriootpa, Port Pirie and Whyalla. One organisation accounts for nearly all terracotta roofing tile production.

#### Brick and Tile Works, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	42	800	8,055	2,803	1,913	1,617	5,042	3,425
1963-64 .....	40	815	9,582	4,057	2,023	1,993	5,957	3,964
1964-65 .....	40	812	11,599	6,760	2,249	2,284	6,577	4,294
1965-66 .....	37	791	13,379	7,385	2,026	2,181	6,180	4,000
1966-67 .....	36	725	12,511	6,755	2,017	2,127	5,864	3,738

### Industrial and Heavy Chemicals

Foremost in the production of industrial and heavy chemicals is a large soda ash plant at Osborne, associated with nearby saltfields at Dry Creek. This plant is the major producer in the Australian alkali industry.

Two organisations are involved in the production of industrial gases and a further plant produces sulphuric acid, largely for use in the fertiliser industry.

### Industrial and Heavy Chemicals, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	16	829	7,954	12,928	2,274	3,648	9,873	6,225
1963-64 .....	16	979	10,727	13,875	2,799	4,964	12,816	7,852
1964-65 .....	16	991	10,577	14,169	3,119	4,876	15,589	10,713
1965-66 .....	17	988	11,249	13,965	3,126	5,652	15,166	9,514
1966-67 .....	18	1,014	12,156	14,645	3,286	6,608	16,904	10,296

### Paints

A variety of paint and allied finishes are produced in plants operated by a number of major paint manufacturers. This industry has been subject to expansion both in output and technical progress with recent emphasis on industrial and plastic paints.

### Paint and Varnish Factories, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	15	402	1,790	2,234	919	4,493	8,212	3,719
1963-64 .....	16	460	2,396	2,282	1,103	4,782	8,822	4,040
1964-65 .....	19	480	2,443	2,358	1,216	5,284	9,515	4,231
1965-66 .....	20	480	2,365	2,367	1,305	5,024	9,136	4,112
1966-67 .....	21	468	2,690	2,524	1,360	4,751	8,395	3,644

### Chemical Fertilisers

In the chemical fertiliser industry there are major plants at Port Adelaide, Port Lincoln and Wallaroo. The most important product is superphosphate which represented approximately 72 per cent of the total value of output in 1966-67, with various mixed fertilisers accounting for most of the balance.

### Chemical Fertiliser Plants, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	11	781	13,969	7,064	1,857	10,394	14,930	4,536
1963-64 .....	9	722	9,684	5,588	1,725	10,046	14,172	4,126
1964-65 .....	9	779	10,040	4,682	2,097	11,872	16,564	4,692
1965-66 .....	10	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1966-67 .....	10	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

n.a.—Not available.

### Mineral Oil

Prior to 1963 production in this field was comparatively small and confined largely to the processing of various bituminous products. However, in March 1963 a further milestone in industrial development was reached with the opening

of an oil refinery at Port Stanvac, some fifteen miles south of Adelaide. The Port Stanvac refinery provides a variety of petroleum products including refinery gas for conversion into domestic gas, and residual oil for use in electricity generation.

### Metal Extraction and Refining

Since the turn of the century a significant proportion of the iron ore used in the Australian steel industry has come from the Middleback Ranges, inland from Whyalla. In 1941, with the installation of a blast furnace, Whyalla became a major source of Australia's foundry iron.

Port Pirie is the site of one of the world's largest lead smelters, treating ore railed from Broken Hill. The plant also produces silver, gold, cadmium and copper by-products. A new plant has recently been completed for the recovery of zinc and, to a lesser extent, lead from a huge slag dump.

### Plant, Equipment, Machinery and Other Engineering

For a number of years South Australia has been one of the leading States in the production of the larger household appliances, including refrigerators, washing machines and stoves. These items constitute a significant part of the total output shown in the next table. Also represented are manufacturers of industrial, construction, and earthmoving machinery, air conditioning equipment, metal furniture and office equipment, and a wide variety of fabricated steel products, together with a large number of general engineering workshops.

#### Plant, Equipment, Machinery and Other Engineering, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	489	15,516	57,772	43,371	33,344	59,744	110,868	51,124
1963-64 .....	508	16,409	60,548	46,527	36,887	67,996	125,503	57,507
1964-65 .....	523	17,778	63,545	50,697	43,615	73,735	140,816	67,081
1965-66 .....	541	18,306	68,951	52,354	46,543	72,693	148,013	75,319
1966-67 .....	579	17,847	72,490	54,330	46,983	74,347	149,333	74,986

### Electrical Machinery, Cables and Apparatus

This classification includes two producers of cables and wires, the production of fluorescent and other light fittings, and of household electrical fittings.

#### Electrical Machinery, Cables and Apparatus, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	142	2,110	2,765	4,525	3,993	6,792	14,027	7,235
1963-64 .....	149	2,610	3,457	4,233	4,928	9,534	18,388	8,855
1964-65 .....	147	2,757	4,560	6,291	5,493	11,145	20,991	9,846
1965-66 (a)....	194	2,851	5,402	7,507	5,777	11,085	21,126	10,040
1966-67 (a)....	204	3,276	7,033	8,914	7,179	13,101	25,310	12,209

(a) Figures from 1965-66 not strictly comparable with earlier years owing to the inclusion of a number of factories which have been reclassified.

Not included in the preceding table is the output of a very large enterprise manufacturing mainly wireless and television apparatus but which also produces electrical cable and wires, and lighting equipment.

### Railway Rollingstock

The principal workshop of the South Australian Railways is situated at Islington. Although concerned primarily with repairs and maintenance, a number of power rail cars and a variety of goods wagons and freight cars have been constructed at Islington in recent years. The South Australian Railways maintains four other metropolitan workshops and seven country workshops, mainly for servicing, with the largest being at Peterborough.

Repairs and maintenance to Commonwealth Railways rollingstock operating from Port Pirie to Kalgoorlie and Alice Springs are carried out in workshops located at Port Augusta.

In 1963-64, the last year for which figures were available for publication, thirteen factories employing 3,699 persons were associated with the production, repair or maintenance of railway rolling stock, output in that year was valued at \$16,783,000 and production \$10,795,000.

### Motor Vehicles

The largest single industry in South Australia and a major contributor to the post-war industrial growth is the motor vehicle industry. However, as there are only a few firms engaged in motor vehicle production, statistics relating to production are not published as the release of total figures could possibly reveal the details of one firm.

Immediately after the 1939-45 War, General Motors-Holden Pty Ltd prepared for the production of an Australian built car, and volume production of the 'Holden' commenced in 1948. The success of this car has led to a number of major increases in productive capacity by the firm involving not only considerable expansion at the Woodville site but also the establishment of a new construction and assembly plant at Elizabeth.

Tonsley Park has become the centre of manufacturing operations for Chrysler Australia Ltd and in July 1967 the company expanded its operations and opened a large foundry and engine plant at Lonsdale, near Port Stanvac.

These large motor vehicle plants in turn absorb the products of many establishments producing vehicle components. Other manufacturers produce omnibus and commercial vehicle bodies, fork lift trucks, garage equipment, trailers, caravans, and a wide range of vehicle accessories.

Repairs to motor vehicles are carried out in the larger workshops operated by new vehicle distributors and in the many smaller workshops generally associated with service stations.

### Motor Vehicle Repair Workshops, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	1,342	6,742	8,780	21,107	10,866	14,188	31,721	17,534
1963-64 .....	1,355	7,158	9,045	20,856	12,058	15,403	35,128	19,725
1964-65 .....	1,373	7,443	11,301	22,244	13,681	17,288	39,701	22,413
1965-66 .....	1,423	7,277	11,906	23,656	13,655	17,628	41,011	23,383
1966-67 .....	1,471	7,351	12,301	24,416	14,562	18,010	42,633	24,623

### Ship and Boat Building

The largest shipyards in Australia are located at Whyalla. Since 1940 forty-eight vessels have been constructed in these yards including four vessels of 55,000 tons, the most recent being the bauxite carrier *Clutha Oceanic* launched on 17 June 1969. An oil drilling barge, the *Ocean Digger*, was completed in mid-1967 weighing 9,100 tons and standing 310 feet high. This vessel was only the fifth of its kind built in the world and was subsequently used in the search for oil off Robe in the south-east of South Australia.

Tugs and larger fishing boats are built in shipyards at Port Adelaide; the largest vessels ever built at these shipyards—two 350 foot steel barges—were launched in June and December 1968 respectively. Other establishments produce smaller commercial and pleasure craft and carry out slipway repair work.

In 1965-66, thirty establishments employing 1,886 persons were associated with ship and boat building or repairing. In that year the industry had a value of output of \$17,801,000 and a production value of \$8,091,000.

### Agricultural Machinery and Implements

The production of agricultural machinery and implements is one of the State's oldest industries. The industry contains a number of comparatively large producers, four of whom accounted for nearly 75 per cent of total output in 1966-67.

#### Agricultural Machinery and Implements, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	63	1,874	6,818	3,641	3,773	5,773	12,955	7,181
1963-64 .....	65	2,008	6,917	4,076	4,291	6,137	14,090	7,953
1964-65 .....	73	2,132	6,990	4,717	5,093	7,228	17,117	9,888
1965-66 .....	83	2,079	8,581	5,011	4,753	6,063	14,008	7,945
1966-67 .....	84	2,146	8,791	5,177	5,185	6,392	16,193	9,801

### Sheet Metal Working

Details of factories whose main activities are sheet metal working, pressing and stamping are given in the following table.

#### Sheet Metal Working, Pressing and Stamping, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	130	3,080	9,758	9,339	6,119	13,127	23,696	10,569
1963-64 .....	131	3,322	9,604	10,757	7,323	14,062	27,030	12,968
1964-65 .....	129	3,560	10,524	9,855	8,364	18,833	33,928	15,094
1965-66 .....	127	3,702	10,804	10,701	8,764	17,859	34,096	16,237
1966-67 .....	137	3,530	10,903	11,239	8,540	19,438	34,324	14,886



**Ferrous Pipes, Tubes, and Fittings**

A number of large pipe and tube making firms are located in Adelaide. These firms accounted for 19 per cent of the total Australian value of output of ferrous pipes, tubes, and fittings for 1966-67.

**Ferrous Pipes, Tubes, and Fittings, South Australia**

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	8	2,209	12,034	7,156	5,675	12,442	22,092	9,651
1963-64 .....	8	2,391	16,349	7,596	6,472	13,401	25,181	11,780
1964-65 .....	8	2,668	20,597	7,883	7,888	17,275	31,831	14,556
1965-66 .....	9	2,690	22,734	7,582	7,635	15,583	28,017	12,430
1966-67 .....	10	2,524	23,223	7,986	7,710	13,679	26,710	13,031

**Wire and Wireworking (Including Nails)**

Nearly all of the thirty-six factories associated with the wire working industry are located in Adelaide. Major production items are woven wire, welded wire fabric, processed reinforced rods, springs, barbed wire and nails.

**Wire and Wireworking (Including Nails), South Australia**

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	29	1,092	2,737	3,088	2,165	6,522	10,212	3,690
1963-64 .....	27	851	2,403	2,833	1,938	5,532	9,292	3,760
1964-65 .....	27	892	2,332	2,937	2,169	6,512	10,518	4,006
1965-66 .....	31	984	2,926	3,860	2,446	6,628	10,689	4,061
1966-67 .....	36	935	3,039	4,343	2,393	6,534	10,790	4,256

**Cotton and Woollen Mills**

Cotton spinning and weaving is carried out in three mills located in the metropolitan area, with the most important products being sheeting, canvas and duck, and towelling.

The two largest of three operative woollen mills are located at the country centres of Lobethal and Mount Gambier. Activity is concentrated largely on the production of blankets and rugs and on worsted spinning.

**Cotton and Woollen Mills, South Australia**

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	9	1,951	6,013	6,241	3,478	5,883	11,757	5,874
1963-64 .....	7	1,922	6,579	7,265	3,855	6,986	13,544	6,558
1964-65 .....	7	2,040	6,880	6,895	4,193	7,972	15,517	7,545
1965-66 .....	7	2,095	7,240	7,117	4,436	8,093	15,638	7,544
1966-67 .....	7	1,988	7,171	6,636	4,647	8,020	16,470	8,451

**Food and Drink**

Details of various food and drink industries which together accounted for 14 per cent of the value of factory output in 1966-67 are given in the following table.

**Food and Drink: Individual Industries, South Australia  
1966-67**

Individual Industry	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
Flour milling ..	18	421	4,286	2,833	1,150	13,922	16,313	2,391
Bakeries .....	263	2,108	5,513	8,844	4,476	12,234	21,619	9,385
Jam, fruit and vegetable canning .....	13	791	3,140	3,895	2,110	8,499	11,471	2,972
Bacon curing ..	14	679	2,941	2,479	1,757	10,673	14,281	3,608
Butter .....	13	302	2,957	1,379	633	4,757	6,221	1,464
Cheese .....	28	464	3,335	2,611	1,164	7,458	9,884	2,426
Meat and fish preserving ..	31	359	1,409	1,727	688	6,399	9,036	2,637
Condiments, coffee and spices .....	15	392	1,597	2,899	768	3,941	5,712	1,771
Ice and refrigerating ..	57	419	10,725	5,676	977	706	2,254	1,547
Aerated waters, cordials, etc. ..	44	755	3,128	4,937	1,733	7,051	11,437	4,386
Distilleries and winemaking ..	75	1,490	12,548	9,741	3,637	16,774	27,667	10,893
Other food or drink industries ...	168	4,108	26,245	22,381	9,261	37,295	58,729	21,436
<b>Total ..</b>	<b>739</b>	<b>12,288</b>	<b>77,824</b>	<b>69,402</b>	<b>28,354</b>	<b>129,709</b>	<b>194,624</b>	<b>64,916</b>

**Flour Milling and Bakeries**

The post-war years have seen considerable consolidation in the flour milling industry. In 1946-47 there were thirty-nine operative mills compared with eighteen in 1966-67. Of these eighteen mills, three are located at Port Adelaide, one at Mile End and one at Salisbury, the remainder being located in country areas. Employment in flour milling totalled 421 persons in 1966-67 with a value of output of \$16,313,000 and a value of production of \$2,391,000.

Details of establishments producing bread, cakes and pastries are shown in the following table.

**Bakeries, South Australia**

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	288	1,795	4,214	8,201	3,056	9,473	16,322	6,849
1963-64 .....	282	1,877	4,531	8,275	3,350	10,313	17,620	7,308
1964-65 .....	278	2,022	4,810	8,769	3,812	11,213	19,119	7,906
1965-66 .....	267	2,091	5,072	8,599	4,109	11,667	20,203	8,537
1966-67 .....	263	2,108	5,513	8,844	4,476	12,234	21,619	9,385

**Wineries and Distilleries**

Another early industry and one involving traditional skills is that of wine-making. In 1966-67, South Australia accounted for 57 per cent of the total value of output of Australian wineries and distilleries. Principal production areas are the Barossa Valley, the Upper Murray irrigation areas and the districts

south of Adelaide. A description of the South Australian wine industry was included on pages 376-95 of the *South Australian Year Book* 1968.

### Wineries and Distilleries, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	68	1,337	11,089	7,385	2,596	10,194	15,161	4,966
1963-64 .....	72	1,393	11,503	7,830	2,803	12,842	19,884	7,042
1964-65 .....	74	1,461	12,142	8,406	3,033	14,010	23,119	9,109
1965-66 .....	78	1,481	12,553	9,016	3,414	14,156	22,437	8,281
1966-67 .....	75	1,490	12,548	9,741	3,637	16,774	27,667	10,893

### Sawmilling

Well over half of Australia's plantation grown pines are in South Australia. Details of milling operations are given in the table below. Of the eighty-nine mills recorded for 1966-67, sixty-three were in areas outside the Adelaide Statistical Division with almost all the larger mills being located near the South East forests. The State Woods and Forests Department operates mills at Mount Gambier, Mount Burr, and Nangwarry. In addition to the milling of logs for flooring, cases, etc. facilities exist for kiln drying and timber preservation, with increasing quantities of fencing posts and poles being treated each year.

### Sawmills, South Australia

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	85	2,341	37,244	9,393	4,501	15,503	23,600	8,097
1963-64 .....	91	2,485	37,796	9,863	4,872	16,553	26,402	9,849
1964-65 .....	89	2,429	38,164	10,454	5,266	18,254	28,786	10,533
1965-66 .....	95	2,511	37,325	10,273	5,408	16,879	27,679	10,800
1966-67 .....	89	2,370	37,843	10,550	5,427	15,337	25,910	10,573

In South Australia there are some 295 joinery workshops. In 1966-67 these workshops employed 2,334 persons, with output being valued at \$14,167,000 and production at \$7,199,000. The motive power of electric motors employed has increased steadily over the last six years from 8,651 horsepower in 1960-61 to 12,770 horsepower in 1966-67.

### Cabinet and Furniture Making

Details of wooden cabinet and furniture making establishments are given in the following table. The 170 factories in 1966-67 varied in size from the many small establishments run solely by a working proprietor or employing one or two persons to three factories each employing over 100 persons.

**Cabinet and Furniture Making, South Australia**

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	172	1,667	5,684	3,168	2,771	5,381	10,095	4,714
1963-64 .....	178	1,794	5,995	3,614	3,127	6,233	11,549	5,316
1964-65 .....	160	1,666	4,742	3,277	3,104	6,032	11,234	5,202
1965-66 .....	168	1,750	5,557	3,730	3,246	5,824	11,434	5,611
1966-67 .....	170	1,693	5,532	4,116	3,331	5,626	11,357	5,731

**Newspapers and Periodicals**

There are two large establishments producing newspapers in Adelaide. Newspaper printing offices are also located in some thirty-one country towns, a number of these producing newspapers for more than one locality. An historical summary of the press in South Australia is given on pages 215-6.

**Newspapers and Periodicals, South Australia**

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	37	1,180	4,920	7,885	2,887	4,925	10,393	5,468
1963-64 .....	39	1,249	5,274	8,748	3,235	5,370	11,787	6,416
1964-65 .....	39	1,279	5,324	9,550	3,468	5,686	12,238	6,552
1965-66 .....	39	1,315	6,133	9,783	3,475	5,531	12,737	7,206
1966-67 .....	38	1,318	6,270	9,983	3,728	5,666	12,833	7,167

**Printing and Bookbinding**

Particulars of general printing establishments, other than those printing newspapers and periodicals, are given in the following table. Excluded are the extensive activities of the State Government Printing Department.

The activities of one establishment include the printing and binding of a wide range of books for Australian and overseas publishers.

**General Printing and Bookbinding, South Australia**

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	120	1,775	2,938	5,528	3,403	4,104	9,987	5,883
1963-64 .....	115	1,732	3,588	6,887	3,495	4,153	10,405	6,253
1964-65 .....	115	1,729	3,663	6,853	3,697	4,343	10,760	6,417
1965-66 .....	113	1,829	3,919	7,694	4,147	4,804	12,104	7,300
1966-67 .....	117	1,877	4,139	8,246	4,332	4,854	12,558	7,704

A further eighteen factories in 1966-67 were involved in the production of cardboard containers and paper bags. Containers and bags to the value of \$9,583,000 were produced, with the value of production being \$3,904,000. Employment in these establishments totalled 718.

**Electricity Generation**

The Electricity Trust of South Australia is responsible for the generation of most of the State's electricity requirements. A summary of the activities of the Electricity Trust is given in Part 8.6.

**Government Electricity Generating Stations, South Australia**

Year	Factories	Persons Employed	Motive Power	Value of Premises and Equipment	Salaries and Wages Paid	Materials, Fuel and Power Used	Value of Output	Value of Production
	No.	No.	hp	\$'000	\$'000	\$'000	\$'000	\$'000
1962-63 .....	10	1,441	765,060	78,155	3,698	8,082	18,482	10,401
1963-64 .....	10	1,436	841,778	77,515	3,968	8,527	20,211	11,684
1964-65 .....	9	1,492	908,983	84,426	4,080	n.a.	n.a.	n.a.
1965-66 .....	12	1,421	911,901	77,149	4,460	n.a.	n.a.	n.a.
1966-67 .....	13	1,457	1,072,974	99,999	4,713	n.a.	n.a.	n.a.

n.a.—Not available.

Small quantities of electricity are generated by local authorities or private firms for domestic consumption in certain country areas, and a number of private firms operate power stations for their own needs.

**9.4 VALUE OF PRODUCTION**

Factory production accounted for 68 per cent of the total net value of production (excluding building and construction) in South Australia during 1967-68 while pastoral and agricultural production accounted for 11 per cent and 10 per cent respectively. Net value of agricultural, pastoral and dairying production was lower in 1967-68 than in previous years due mainly to the drought conditions in 1967.

Details for the last five years of these and other classes of production are given in the tables below. In the first, primary production is expressed in terms of gross value, this being the value placed on recorded production at the wholesale prices realised in principal markets.

**Gross Value of Primary Production, South Australia**

Class of Production	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Agricultural .....	165,634	178,132	144,017	184,090	125,914
Pastoral .....	150,466	135,916	152,224	169,226	129,504
Dairying .....	34,267	37,533	39,293	40,303	36,757
Other rural .....	8,435	8,926	9,481	11,246	12,267
Mining and quarrying .....	66,024	71,662	72,765	76,901	73,739
Forestry .....	8,219	8,846	9,729	8,888	8,501
Other .....	4,730	6,119	6,989	6,928	7,945
Total primary .....	437,775	447,134	434,498	497,580	394,628

In the next table primary production is expressed in terms of net value and incorporated with comparable figures for factory production. The net value of primary production is the gross value less marketing costs and costs of

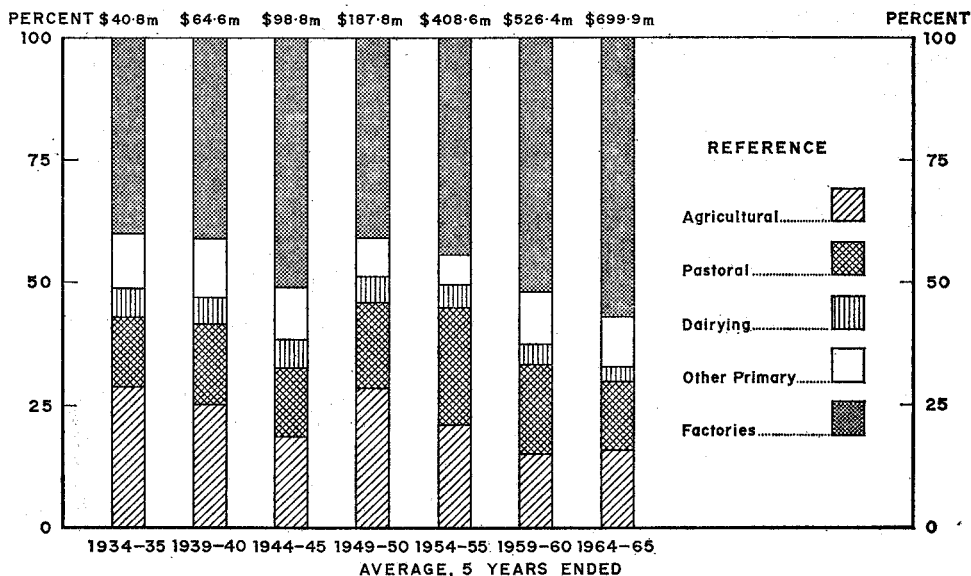
materials used in the process of production. The factory figures are for value added in the process of manufacture, *i.e.* the value of output less value of materials and fuels used.

### Net Value of Production, South Australia

Class of Production	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Agricultural .....	125,180	134,239	105,657	137,042	90,057
Pastoral .....	125,979	110,054	123,757	134,608	98,999
Dairying .....	21,195	25,005	25,127	25,239	21,970
Other rural .....	2,366	2,052	2,393	3,224	3,944
Mining and quarrying .....	57,836	62,727	62,727	66,909	63,492
Forestry .....	8,168	8,801	9,693	8,853	8,467
Other .....	4,111	5,371	6,124	6,087	7,015
Total primary .....	344,835	348,249	335,478	381,962	293,944
Factory .....	427,356	498,588	527,477	563,764	631,890
Total .....	772,191	846,837	862,955	945,726	925,834

Movements in the relative contributions of individual classes to total production since 1934-35 can be readily seen in the following bar chart.

### NET VALUE OF PRODUCTION (PROPORTION OF COMPONENTS TO TOTAL)



Earlier information on the gross value of primary production, since 1908-09 is given in the Statistical Summary on page 612 while details of net value of production since 1925-26 are on page 613.

## **PART 10**

# **COMMERCE**

### **10.1 INTERNAL TRADE**

#### **RETAIL TRADE**

Various aspects of retail trading in South Australia are subject to control under State legislation. These include hours of trading in the metropolitan and specified country areas, which are controlled under the Early Closing Act, 1926-1960, administered by the Department of Labour and Industry; prices for a variable range of goods which are controlled under the Prices Act, 1948-1967, administered by the South Australian Prices Department; and minimum wages payable and some other conditions of employment which are prescribed in awards and determinations of the State Industrial Commission and Conciliation Committees. Some classes of employees are covered by Commonwealth awards.

Statistics of retail sales and other information concerning the structure and pattern of retail trading have been obtained from Censuses of Retail Establishments conducted throughout Australia in respect of the years ended 30 June 1948, 1949, 1953, 1957, and 1962. In addition, quarterly estimates of the value of retail sales have been calculated from September quarter 1950 by means of sample surveys.

#### **Censuses of Retail Establishments**

In general terms, the Censuses cover the retail trading activities of establishments which normally sell goods by retail to the general public from fixed premises such as shops, rooms, kiosks, and yards. Retail activities of wholesalers and manufacturers who sell regularly by retail to the general public are included. Sales by itinerant vendors, sales from casual stalls and booths, and sales by establishments with total retail sales of less than \$1,000 in census years are excluded.

The design of the Censuses is such that particulars reported indicate the value of retail sales to the final consumer, of new and secondhand goods generally used for household and personal purposes. For this reason reported sales of building materials, farm and industrial machinery and equipment, earth-moving equipment, etc. have been excluded. For the same reason, and also because of difficulties in obtaining reliable and complete reporting, retailers were requested to report separately sales of builders hardware and supplies, business machines and equipment, grain, feed, fertilisers and agricultural supplies, and tractors and these were excluded from the 1961-62 Census. Retail sales of motor vehicles, parts, etc. are included whether for industrial, commercial, farm or private use.

At each Census every establishment was classified according to type of business. For most businesses the classification was based on the commodity or commodity group in which predominant sales were recorded. Details of number of establishments, value of retail sales and value of stocks for the various types of business at the last two Censuses are shown in the following table.

**Retail Establishments, Sales and Stocks by Type of Business, South Australia**  
*Censuses 1956-57 and 1961-62*

Type of Business	Establishments		Retail Sales		Retail Stocks at 30 June	
	1956-57	1961-62	1956-57	1961-62	1957	1962
	No.	No.	\$'000	\$'000	\$'000	\$'000
<b>Food stores</b>						
Grocers .....	2,088	2,011	76,580	97,664	10,882	11,982
Butchers .....	915	1,034	29,134	33,622	348	370
Fruiters .....	620	613	12,630	14,342	328	334
Bakers .....	404	392	11,076	12,678	348	388
Confectioners and milk bars .....	770	1,059	16,112	25,322	838	1,248
Cafes .....	104	117	930	984	84	74
Fishmongers and poulterers .....	125	177	1,960	2,740	46	54
Other food stores .....	206	252	4,478	6,294	172	260
<b>Hotels, tobacconists, etc.</b>						
Hotels, wine saloons, etc. ....	641	650	41,686	49,598	1,672	2,194
Tobacconists .....	106	70	2,648	1,622	256	184
Tobacconists and hairdressers .....	281	319	2,242	1,618	218	176
<b>Department stores, clothiers, drapers, etc.</b>						
Department stores .....	9	12	48,924	69,048	8,858	10,490
Clothiers and drapers .....	1,060	988	45,974	45,484	11,072	10,982
Footwear stores .....	187	209	6,454	7,678	2,096	2,588
<b>Hardware, electrical goods, furniture stores, etc.</b>						
Domestic hardware stores .....	305	274	4,218	5,276	1,266	1,310
Electrical goods, and musical instrument stores .....	344	402	13,242	24,418	2,740	4,848
Furniture and floor coverings stores ..	194	184	15,896	14,946	3,578	3,650
<b>Other goods stores</b>						
Chemists .....	403	466	10,634	18,326	1,924	3,056
Newsagents and booksellers .....	208	237	5,584	7,026	968	1,302
Sports goods stores .....	43	64	1,244	1,614	354	454
Watchmakers and jewellers .....	149	138	3,222	2,954	1,552	1,442
Cycle stores .....	67	51	922	852	292	340
Florists and nurserymen .....	93	85	864	1,036	50	50
Other types of business .....	264	290	4,808	5,132	1,028	1,480
<b>Motor vehicle dealers, garages, etc.</b>						
New motor vehicle dealers, garages and service stations .....	1,232	1,405	97,030	110,846	10,354	11,422
Used motor vehicle dealers .....	157	154	24,146	25,826	2,640	3,260
Motor parts and tyre dealers .....	85	159	4,374	7,762	730	1,468
<b>Total</b> .....	<b>11,060</b>	<b>11,812</b>	<b>487,012</b>	<b>594,708</b>	<b>64,694</b>	<b>75,406</b>

The next table shows, for the last two Censuses, the number of establishments selling goods in each of thirty broad commodity groups and the total value, and value per head of population, of sales in those commodity groups. Adjustments have been made for changes in the scope of the Censuses. The number



of establishments shown for each commodity group is the number which recorded any sales in that group.

Some retailers selling small quantities of particular commodities may not have shown those sales separately in their returns; it is unlikely that this has caused significant understatement of the sale of any commodity but the numbers of establishments should be taken as giving only a general indication of the pattern of retail outlets for the various commodity groups. Because many retailers recorded sales in more than one commodity group the numbers of establishments shown against the groups do not add to the total of the individual establishments.

### Retail Establishments and Sales by Commodity Groups, South Australia

*Censuses 1956-57 and 1961-62*

Commodity Group	Establishments		Retail Sales of Goods			
	1956-57	1961-62	Total		Per Head of Population	
			1956-57	1961-62	1956-57	1961-62
	No.	No.	\$'000	\$'000	\$	\$
<b>Foodstuffs</b>						
Groceries .....	3,168	3,480	55,296	71,012	63.80	72.50
Butchers meat .....	1,006	1,439	29,064	35,198	33.80	35.90
Fresh fruit and vegetables .....	1,721	2,050	12,812	14,868	14.80	15.20
Bread, cakes and pastry .....	2,188	2,696	13,294	16,308	15.40	16.60
Confectionery, icecream, softdrinks .....	3,554	4,172	16,198	20,976	18.80	21.40
Other types of food .....	1,945	2,491	8,486	12,810	10.00	13.10
<b>Beer, tobacco, etc.</b>						
Beer, wine and spirits .....	747	740	39,772	47,280	46.20	48.30
Tobacco and cigarettes .....	5,003	6,046	17,386	21,558	20.20	22.00
<b>Clothing, drapery, etc.</b>						
Clothing:						
Mens and boys .....	1,115	1,125	21,366	24,182	24.60	24.70
Womens, girls and infants .....	1,231	1,206	36,434	39,674	41.80	40.50
Drapery, piecegoods, blankets, etc. ....	928	1,028	13,214	16,792	15.80	17.20
Footwear:						
Mens and boys .....	835	831	4,148	5,048	4.80	5.20
Womens, girls and infants .....	761	783	6,968	8,940	8.00	9.10
<b>Hardware (a), electrical goods, etc.</b>						
Domestic hardware .....	1,478	1,587	11,006	12,298	12.80	12.60
Radios and radiograms .....	594	487	3,902	3,352	4.60	3.40
Television and accessories (b) .....		400		7,658		7.80
Musical instruments, records, etc. ....	266	236	1,990	2,032	2.40	2.10
Domestic refrigerators .....	539	428	5,288	6,360	6.20	6.50
Other electrical goods .....	943	945	7,532	11,016	8.80	11.20
<b>Furniture and floor coverings</b>						
Furniture .....	421	407	12,612	13,900	14.60	14.20
Floor coverings .....	351	360	6,200	6,724	7.20	6.90
<b>Other goods</b>						
Chemists goods (c) .....	1,334	1,832	13,052	22,614	15.20	23.10
Newspapers, books and stationery .....	1,543	1,805	8,680	10,642	10.00	10.90
Sporting requisites, travelgoods .....	571	656	2,442	3,146	2.80	3.20
Jewellery, watches, clocks, etc. ....	616	668	4,720	4,904	5.40	5.00
Other goods .....	888	1,064	10,406	12,272	12.40	12.50
<b>Total (excluding motor vehicles, etc.) .</b>	<b>(e)</b>	<b>(e)</b>	<b>362,268</b>	<b>451,564</b>	<b>420.40</b>	<b>461.10</b>
<b>Motor vehicles, etc. (d)</b>						
Motor vehicles (incl. motor cycles):						
New .....	305	470	50,518	53,538	58.60	54.70
Used .....	600	611	36,642	41,436	42.60	42.30
Motor parts, accessories, etc. ....	1,291	1,531	15,448	17,732	18.00	18.10
Petrol, oil, etc. ....	1,488	1,715	22,136	30,438	25.60	31.10
<b>Total motor vehicles .....</b>	<b>(e)</b>	<b>(e)</b>	<b>124,744</b>	<b>143,144</b>	<b>144.80</b>	<b>146.20</b>
<b>Grand Total .....</b>	<b>11,060</b>	<b>11,812</b>	<b>487,012</b>	<b>594,708</b>	<b>565.20</b>	<b>607.30</b>

(a) Excludes basic building materials and builders hardware and supplies such as tools of trade, paint, etc.

(b) Negligible in 1956-57.

(c) Includes toiletries, cosmetics, and dispensing.

(d) Excludes tractors, farm machinery and implements, earth-moving equipment, etc.

(e) Not appropriate; some establishments make sales in more than one commodity group.

In 1956-57, the value of retail sales per head of population in South Australia was almost the same as the Australian average of \$566, but in 1961-62 the figure for this State (\$607) had fallen well below the corresponding Australian figure of \$644. However, subsequent estimates from the Survey of Retail Establishments indicated that by 1964-65 sales per head of population in South Australia had recovered to about the Australian level but that the 1967-68 figure of \$800 had fallen below the Australian figure of \$857.

In the next table a variation in classification of new motor vehicle sales has affected comparability of the figures. In 1956-57, each sale on commission was attributed to the principal rather than to the agent but in 1961-62 each sale of a new motor vehicle was attributed to the establishment, whether of a principal or an agent, which made the sale to the final consumer. In practice, the 1956-57 procedure probably tended to bias new motor vehicle sales towards the metropolitan area, where principals are mainly located.

### Retail Establishments, Sales and Stocks, Statistical Divisions

*Censuses 1956-57 and 1961-62*

Statistical Division	Establishments		Retail Sales		Retail Stocks at 30 June	
	1956-57	1961-62	1956-57	1961-62	1957	1962
	No.	No.	\$'000	\$'000	\$'000	\$'000
Metropolitan (a)						
Municipality of Adelaide .....	1,491	1,490	177,522	195,896	27,050	29,378
Other metropolitan .....	5,150	5,485	151,600	203,794	15,072	19,430
Total metropolitan .....	6,641	6,975	329,122	399,690	42,122	48,808
Central .....	1,552	1,757	45,764	61,958	5,776	7,296
Lower North .....	792	769	26,804	28,282	4,558	4,656
Upper North (b) .....	376	378	14,872	16,350	1,854	2,258
South Eastern .....	581	690	27,444	32,798	4,040	4,706
Western .....	501	568	19,414	26,662	2,866	3,650
Murray Mallee .....	617	675	23,592	28,968	3,478	4,032
Total State .....	11,060	11,812	487,012	594,708	64,694	75,406

(a) As defined for Census purposes prior to 30 June 1966.

(b) Including 'Remainder of State'.

### Surveys of Retail Establishments

During periods between Censuses, estimates of the value of retail sales are calculated from returns received from a sample of retail establishments covering businesses which account for approximately 45 per cent of all retail sales in Australia.

The following table shows the value of retail sales of goods in South Australia in broad commodity groups in each of the years 1963-64 to 1967-68.

The value of sales of the food and groceries group as a proportion of total sales increased from 26.6 per cent in 1964-65 to 28.6 per cent in 1966-67, but declined slightly to 27.9 per cent in 1967-68. The motor vehicle group declined from 29.3 per cent in 1964-65 to 25.3 per cent in 1966-67, but increased slightly to 26.2 per cent in 1967-68.

## Value of Retail Sales: Commodity Groups, South Australia

Commodity Group	Value of Retail Sales of Goods				
	1963-64	1964-65	1965-66	1966-67	1967-68
	\$ million				
Groceries.....	80.4	88.2	94.2	99.0	105.6
Butchers meat .....	43.0	46.3	49.5	51.7	50.3
Other food .....	73.6	81.4	85.4	88.8	93.8
Total food and groceries .....	197.0	215.9	229.1	239.5	249.7
Beer, wine and spirits .....	52.7	55.8	60.5	63.4	72.1
Clothing, drapery, etc. ....	96.2	104.2	104.4	107.9	112.7
Footwear .....	15.4	16.5	16.9	17.8	18.4
Hardware, china, etc. ....	12.7	14.3	15.2	16.0	16.6
Electrical goods .....	38.4	42.0	40.4	38.8	41.7
Furniture and floor coverings ...	25.5	29.3	30.9	30.5	31.4
Chemists goods (a) .....	26.1	28.9	32.0	34.0	36.6
Other goods (b) .....	61.3	67.7	72.2	77.3	81.3
Total excluding motor vehicles, etc.	525.3	574.6	601.6	625.2	660.5
Motor vehicles, parts, petrol, etc..	212.4	237.8	219.6	211.5	233.9
Total .....	737.7	812.4	821.2	836.7	894.4

NOTE : Builders hardware and supplies, basic building materials, farm and business machines, earth moving equipment, and grain, feed and fertilisers are excluded.

(a) Includes toiletries, cosmetics, and dispensing.

(b) Includes tobacco, cigarettes, jewellery, sporting goods, etc.

## WHOLESALE TRADE

Some indication of the volume of wholesale trade in South Australia is given by statistics collected under Commonwealth Sales Tax Acts. However, the statistics do not relate to all wholesale trade and do not necessarily cover a constant portion of such trade because vendors trading in exempt goods only are not required to furnish returns.

## Wholesale Sales Recorded Under Sales Tax Acts, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Gross taxable sales					
At a tax rate of;					
2½ per cent .....	41,374	44,260	42,037	47,234	52,564
12½ per cent .....	104,846	111,726	113,805	114,300	120,124
22½ per cent .....	52,023	9,530	—	—	—
25 per cent .....	14,993	64,804	65,272	62,120	69,657
Exempt sales .....	487,098	563,822	570,170	557,775	603,292
Total sales .....	700,334	794,142	791,284	781,429	845,637

## 10.2 OVERSEAS TRADE

### LEGISLATION AFFECTING OVERSEAS TRADE

The power to make laws with respect to trade and commerce with other countries was conferred on the Commonwealth Parliament by the Commonwealth of Australia Constitution Act, Section 51 (i). Under Section 86 of the Constitution, the collection and control of duties of customs and excise passed to the Executive Government of the Commonwealth on 1 January 1901. Other references to trade and commerce are contained in Sections 87 to 95 of the Constitution.

The Commonwealth legislation affecting overseas trade includes the Customs Act, the Customs Tariff, and the Customs Tariff (Dumping and Subsidies) Act. The Customs Act is the administrative Act under which the Department of Customs and Excise operates, while the Customs Tariff provides the statutory authority for imposing the actual rates of duty operative from time to time and the Customs Tariff (Dumping and Subsidies) Act provides protection for Australian industry against various forms of unfair trading.

#### The Customs Tariff

The first Commonwealth Customs Tariff was introduced by Resolution on 8 October 1901 from which date uniform duties for each State came into effect throughout Australia. The tariff has since been extensively amended.

On 1 July 1965 the Australian tariff was re-issued in Brussels Nomenclature form. The new form of the tariff is claimed to have the following advantages:

- (a) it provides a permanent framework for future amendments and expansion of the tariff, and
- (b) the nomenclature has been adopted by a large number of countries, providing a uniform method of classifying commodities in international trade.

The Australian Customs Tariff has been developed in conformity with the policy of protecting economic and efficient Australian industries and of granting preferential treatment to certain imports from certain countries of the Commonwealth. Duties are also imposed on some goods, generally of a luxury nature, for revenue purposes. Customs collections are a major source of revenue, but in its protective character the tariff has an important influence on the Australian economy.

Australia has two classes of tariff; the Preferential and the General Tariff.

The Preferential Tariff rates of duty apply to goods the produce or manufacture of the United Kingdom, provided that such goods comply with the laws and statutory regulations in force at the time affecting the grant of preference, and that the intended destination of the goods, when originally shipped from the United Kingdom, was Australia.

The Preferential Tariff also applies to the Republic of Ireland and, with the exception of a relatively small number of commodities which carry special rates of duty, to Canada, New Zealand (except Cook Islands) and the Territory of Papua and New Guinea. In relation to certain goods, the Preferential Tariff also applies to specified members of the Commonwealth of Nations and most United Kingdom dependencies (dependent territories, protectorates and protected states).

The General Tariff applies to goods other than those to which the Preferential Tariff applies.

### Primage Duties

In addition to the duties imposed by the Customs Tariff, *ad valorem* primage duties at rates of 5 or 10 per cent are charged on some goods according to the type and origin of the goods. Goods the produce or manufacture of New Zealand, Norfolk Island, Fiji, Cocos Islands, Christmas Island and the Territory of Papua and New Guinea are exempt from primage duty.

### Anti-dumping Legislation

The *Customs Tariff (Dumping and Subsidies) Act* 1961-1965 provides protection for Australian industry against various forms of unfair trading. Under this Act a dumping duty may be imposed on goods that are sold to Australia at an export price which is less than the normal value of the goods or a countervailing duty on subsidised goods, where this causes or threatens material injury to an Australian industry.

Special duties may be collected also if dumped or subsidised goods are imported to the detriment of the trade of a third country in the Australian market.

### Import Controls

A system of import licensing introduced in 1939, as a war-time measure, provided that goods could not be imported into Australia unless a licence had been issued or they had been specifically exempted from control. The controls were progressively relaxed during the post-war years but were subsequently re-imposed in 1952, as a result of a serious deterioration in Australia's external financial position, on imports from all sources except Papua, New Guinea and Norfolk Island. The object was to limit the value of imports to an annual rate determined by the government in order that payments for imports would not involve an excessive drawing on Australia's international reserves. The import licensing controls have since been removed with the exception of some goods retained under control for reasons associated with the protection of certain Australian industries.

The Customs (Prohibited Imports) Regulations list those commodities whose importation is prohibited absolutely, or restricted, on social grounds. Other items are prohibited, or restricted, on health grounds (human, animal or plant) by the *Quarantine Act* 1908-1969 and the *Therapeutic Goods Act* 1966.

### Export Controls

Under Section 112 of the Customs Act the exportation of goods from Australia, may be (a) prohibited absolutely, (b) prohibited to a specified place, or (c) prohibited unless prescribed conditions or restrictions are complied with.

The *Banking Act* 1959-1967 contains provision to ensure that the full proceeds of goods exported from Australia are received into the Australian banking system and that these proceeds are received in the currency and in the manner prescribed by the Reserve Bank of Australia.

## ADVISORY AUTHORITIES ON OVERSEAS TRADE

### Tariff Board

The *Tariff Board Act* 1921-1967 provides for the appointment of a Tariff Board consisting of eight members. Of these, two must, and three may, be members of the Commonwealth Public Service at the time of their original appointment. The purpose of the Tariff Board is to advise the Government on matters relating to the protection and encouragement of Australian industry.

The Minister for Trade and Industry is required to refer to the Board for inquiry and report the following: the necessity for new, increased, or reduced duties; the necessity for granting bounties and the effect of existing

bounties; and any complaint that a manufacturer is taking undue advantage of the protection afforded him by the tariff or by the restriction of the importation of any goods by charging unnecessarily high prices or acting in restraint of trade.

In addition, the Minister may refer the following matters to the Tariff Board for inquiry and report: the general effect of the working of the Customs Tariff and the Excise Tariff; the fiscal and industrial effects of the Customs laws on the Commonwealth; the incidence between the rates of duty on raw materials and on finished or partly finished products; and other matters affecting the encouragement of primary and secondary industries in relation to the tariff.

The Minister for Customs and Excise may refer to the Tariff Board for inquiry and report the following matters: the classification of goods in the Customs Tariff or Excise Tariff and matters in connection with the interpretation of these tariffs; the question of the value for duty of goods; whether goods not prescribed in departmental by-laws should be so prescribed; and any matters in respect of which action may be taken under the *Customs Tariff (Dumping and Subsidies) Act* 1961-1965.

#### **Special Advisory Authority**

The Minister for Trade and Industry may also request a Special Advisory Authority to inquire into cases where urgent action appears necessary to protect an Australian industry against import competition pending receipt and consideration of a full report by the Tariff Board. The Special Advisory Authority's report must be submitted to the Minister within thirty days of the making of the request. Temporary protection recommended by a Special Advisory Authority may be imposed, but may only operate for a period of up to three months after the date of receipt of the final report by the Tariff Board on the goods concerned.

### **ENCOURAGEMENT OF OVERSEAS TRADE**

#### **Trade Commissioner Service**

The *Trade Commissioners Act* 1933-1936 provides for the appointment of one or more Trade Commissioners and Assistant Trade Commissioners of the Commonwealth in such places as the Governor-General determines.

In 1957 Australia's official commercial representation was extended by the introduction of a system of Trade Correspondents. These correspondents, who are appointed in countries where there is no Trade Commission, are engaged on a part-time basis and operate under the general direction of the Trade Commissioner in whose area they are located.

The Trade Commissioner Service is administered by the Commonwealth Department of Trade and Industry and is responsible for overseas commercial intelligence. Particular facilities offered to Australian exporters and export organisations include market surveys, advice on selling and advertising methods, arranging introductions with buyers and agents, providing reports on the standing of overseas firms, assisting business visitors and organising trade missions, trade displays and other publicity and promotion media.

In some countries, Trade Commissioners participate in inter-governmental negotiations on economic and commercial matters. A Trade Commissioner may also be called upon to act as the Australian Government representative in those countries where there is no Australian diplomatic or consular mission.

#### **Export Payments Insurance**

The *Export Payments Insurance Corporation Act* 1956-1966 established the Corporation with the objective of protecting Australian exporters against risks of loss arising from non-payment of their overseas accounts. The main risks of

loss against which the Corporation insures are the 'commercial' risks of the insolvency or protracted default of the buyer, and 'political' risks, such as war or cancellation of a valid import licence. More recently, in 1965, the scope of the Corporation was widened to include the ability to insure Australian investments in overseas countries against, broadly, three types of 'political' risks: expropriation; inability to transfer currencies; and damage as the result of war or insurrection.

### Export Incentives

The Commonwealth Government provides taxation concessions as financial incentives to export. A special income tax allowance for export market development expenditure is designed to encourage firms to incur promotion expenditure in advance of export sales and to assist exporters and potential exporters to expand sales in the existing markets and to enter new overseas markets. Rebates of payroll tax are also granted to employers whose export sales of goods or property rights have increased above their average annual level in a base period.

### TRADE AGREEMENTS

Australia has entered into a number of trade agreements with various countries to obtain, in general, preferential rates of duty for a range of Australian commodities in those countries and in turn has contracted to extend preferential treatment to a range of commodities entering Australia from those countries. In terms of the annual value of trade, the principal agreements are with the United Kingdom, Canada, New Zealand, Japan, and the Federal Republic of Germany.

The General Agreement on Tariffs and Trade (G.A.T.T.), of which Australia is an original member, is an international trade agreement which has been in operation since 1 January 1948. The objectives of the G.A.T.T. include the expansion of world trade and the raising of living standards throughout the world. The essential features of the G.A.T.T. are the schedules of tariff concessions which its members have agreed to apply consequent to tariff negotiations with each other, the application of most-favoured-nation treatment among its members, the avoidance of trade discrimination, and a code of agreed commercial policy rules for fair international trading.

Five series of tariff negotiations have been conducted, as a result of which Australia has obtained tariff concessions on almost all the principal products of which it is an actual or potential exporter to the individual countries concerned. A sixth series of tariff negotiations, the Kennedy Round, based on a plan for linear tariff cuts on all classes of products, including agricultural and primary products with a minimum of exceptions, and on a reduction of non-tariff barriers to trade, began in May 1964 and concluded in May 1967. Agreement was reached on a higher minimum world price for wheat (see International Grains Agreements page 380) and on the gradual reduction in tariff duties on many other commodities.

### METHOD OF RECORDING IMPORTS AND EXPORTS

Overseas trade statistics are compiled from documents obtained under the *Customs Act* 1901-1968. Statistics for South Australia apply to the imports into and exports from Australia which are documented (entered or cleared) at Customs recording points in South Australia. Imports do not provide a record of the overseas goods used or consumed in South Australia, as some of the goods pass subsequently to other Australian States and some goods imported through other States pass into South Australia. Similarly, exports include some products

of other States documented in South Australia, but exclude products of South Australia documented in other States. Commodities transported by sea, air or parcels post are included. Since the introduction of container shipping early in 1969 containerised goods may be documented as South Australian exports or imports even though loaded or unloaded at ports in other States, particularly Melbourne; the interstate movement of the goods is predominantly by rail.

All values in overseas trade statistics are determined on a 'free on board (f.o.b.) port of shipment' basis. This means that all charges, in particular the cost of freight and insurance, incurred after the goods have been exported from the port of shipment are excluded. Only transport and service charges incurred prior to export are included in the determination of trade values.

The procedure adopted to value exports and imports is as follows:

*Exports:*

- (a) Goods sold to overseas buyers before export are valued at the Australian f.o.b. port of shipment equivalent of the actual price at which the goods were sold.
- (b) Goods shipped on consignment are valued at the Australian f.o.b. port of shipment equivalent of the price paid for similar goods of Australian origin in the principal markets of the country to which they are despatched for sale.

*Imports:* The recorded value of goods imported is the amount on which duty is payable or would be payable if the duty were *ad valorem*. Value for duty is the f.o.b. port of shipment equivalent of either:

- (a) the actual price paid or to be paid by the Australian importer plus any special deduction (transactions value); or
- (b) the 'current domestic value' of the goods, whichever is the higher.

'Current domestic value' is defined as 'the amount for which the seller of the goods to the purchaser in Australia is selling or would be prepared to sell for cash, at the date of exportation of those goods, the same quantity of identically similar goods to any and every purchaser in the country of export for consumption in that country'.

*Inclusions and Exclusions*

Export tabulations do not include the value of stores loaded on aircraft and ships (e.g. aircraft fuel, bunker oil, food and drink for passengers and crew, and ships' fittings installed on overseas-owned ships in Australian ports). Outside packages (containers, crates) are included as a separate item in imports. For exports, however, the value recorded for each item includes the value of the outside package. Particulars of direct transit trade through Australia are not recorded.

*Countries*

'Country of origin' appearing in import tables should be taken to mean the country of production. 'Country of consignment' appearing in export tables means the country to which goods were consigned so far as this can be determined at the time of export. Where the country of consignment is not determined at the time of export, goods are shown as exported 'For Orders'.

## OVERSEAS TRADE OF SOUTH AUSTRALIA

### IMPORTS

The total value of overseas imports into South Australia during 1967-68, \$215.6 million, exceeded by \$10.8 million the previous record level of 1963-64 and was \$18.8 million more than in 1966-67. The higher level of imports resulted mainly from increased import of transport equipment, which accounted



for more than \$43 million, 20 per cent of total imports for the year: approximately \$16 million was for aircraft and aircraft parts, almost exclusively from United States of America; and about \$27 million for road motor vehicles, parts, etc., of which \$15 million came from U.S.A., about \$5 million from United Kingdom and slightly less than \$3.5 million from Japan.

In the following table figures for years before 1965-66 are estimates only; it has been necessary to combine some groups to achieve reasonable comparability.

**Overseas Imports to South Australia: Principal Commodity Groups**

Commodity Group	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Food and live animals .....	3,798	4,449	4,650	5,130	5,001
Beverages and tobacco .....	592	660	683	618	737
Crude materials, inedible:					
Crude rubber .....	740	971	1,264	1,292	1,166
Wood, timber and cork .....	6,448	7,336	6,047	5,031	5,991
Textile fibres and waste .....	4,450	4,374	2,177	1,500	2,026
Crude fertilisers, crude minerals	2,550	4,098	4,102	5,763	7,093
Other .....	1,824	2,042	1,893	1,987	3,397
Mineral fuels, lubricants .....	20,893	22,228	24,570	26,844	24,438
Animal and vegetable oils and fats	608	578	690	596	566
Chemicals:					
Chemical elements and com- pounds .....	7,258	8,514	2,187	2,935	2,366
Plastics and artificial resins ...			2,200	1,954	2,109
Other .....			3,838	4,388	4,520
Manufactured goods:					
Paper and paperboard manu- factures .....	4,169	5,046	4,720	4,109	5,022
Yarn, fabrics and made-up articles .....	10,561	11,723	12,955	11,217	9,744
Non-metallic mineral manu- factures, n.e.s. ....	6,551	8,812	7,309	6,997	8,574
Iron and steel .....	6,820	12,030	7,464	4,278	5,635
Non-ferrous metals .....	1,163	1,651	970	1,316	1,247
Manufactures of metal, n.e.s. .	(a)	(a)	3,903	5,919	3,576
Machinery and transport equip- ment:					
Machinery, other than electric .	86,372	92,955	44,898	42,926	44,634
Electrical machinery and appliances .....			16,095	16,610	14,697
Transport equipment .....			29,699	26,739	43,427
Miscellaneous manufactured articles	7,392	8,937	8,543	9,410	10,306
Commodities and transactions not classified to kind .....	7,460	8,451	7,298	9,210	9,347
<b>Total .....</b>	<b>179,651</b>	<b>204,856</b>	<b>198,156</b>	<b>196,771</b>	<b>215,619</b>

(a) Included with machinery and transport equipment.

The United States of America remained the main source of imports during 1967-68 with a record \$70.5 million worth of goods, almost double the value of the second major source, the United Kingdom, with \$37.3 million. In 1953-54 the United Kingdom supplied over half of the total value of imports to South Australia, but there has since been a steady decline to 17.3 per cent in 1967-68. In the years immediately before 1960-61 imports from the United States of America represented about 10 to 12 per cent of total imports. By 1963-64 the proportion had increased to about 30 per cent and in 1967-68 was a record 32.7 per cent.

## Overseas Imports to South Australia: Principal Countries

Country of Origin	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Canada .....	9,715	11,185	11,484	9,769	17,887
France .....	3,325	1,693	2,167	3,944	3,789
Germany, Federal Republic of .....	7,259	8,817	9,747	7,364	7,743
India .....	3,218	4,734	4,130	2,949	2,349
Italy .....	1,557	2,028	2,064	2,958	3,116
Japan .....	8,440	16,399	13,544	15,140	15,439
Malaysia .....	2,107	3,340	1,892	1,758	2,061
Netherlands .....	3,294	4,524	4,663	4,680	4,861
New Zealand .....	2,169	2,380	2,323	1,946	2,930
Pakistan .....	2,673	1,556	3,172	3,121	2,106
Saudi Arabia .....	16,985	18,012	21,777	23,802	21,430
Sweden .....	2,990	2,649	3,259	2,885	2,171
United Kingdom .....	44,296	48,596	46,215	42,577	37,293
United States of America .....	54,810	59,655	53,997	54,342	70,521
Other .....	16,813	19,288	17,722	19,336	21,923
Total .....	179,651	204,856	198,156	196,771	215,619

The following table shows by commodity groups the imports from principal countries during the year 1967-68.

Overseas Imports to South Australia from Principal Countries  
Commodity Groups, 1967-68

Commodity Group	Canada	Japan	Saudi-Arabia	United Kingdom	U.S.A.	Other	Total
	\$'000						
<b>Food and live animals:</b>							
Fish and fish preparations .....	168	425	—	414	9	875	1,892
Coffee, tea, cocoa, spices .....	—	69	—	22	11	1,053	1,156
Other .....	50	18	—	221	360	1,304	1,953
Beverages and tobacco .....	1	—	—	439	5	292	737
<b>Crude materials, inedible:</b>							
Crude rubber .....	45	11	—	62	413	635	1,166
Wood, timber and cork .....	3,110	—	—	1	878	2,002	5,991
Textile fibres and waste .....	25	67	—	1	927	1,006	2,026
Crude fertilisers and crude minerals .....	430	121	—	36	1,437	5,069	7,093
Other .....	1,355	3	—	59	217	1,764	3,398
Mineral fuels, lubricants .....	1	—	21,430	122	274	2,610	24,438
Animal and vegetable oils and fats .....	11	16	—	91	46	401	566
<b>Chemicals:</b>							
Chemical elements and compounds .....	98	220	—	457	464	1,126	2,366
Plastic materials and artificial resins .....	97	191	—	624	554	643	2,109
Other .....	74	701	—	1,318	1,463	963	4,520
<b>Manufactured goods:</b>							
Rubber manufactures .....	3	398	—	837	292	604	2,135
Paper, paper board and manufactures .....	1,809	243	—	384	100	2,486	5,022
Textile yarn, fabrics, made up articles .....	128	1,745	—	1,405	554	5,912	9,744
Non-metallic manufactures, n.e.s. ....	107	952	—	1,797	600	2,984	6,439
Iron and steel .....	765	2,251	—	934	600	1,084	5,635
Non-ferrous metals .....	278	1	—	342	94	531	1,247
Manufactures of metal, n.e.s. ....	217	491	—	1,274	911	684	3,576
<b>Machinery and transport equipment:</b>							
Machinery, other than electric .....	5,906	1,363	—	11,121	21,513	4,731	44,634
Electrical machinery and appliances .....	132	943	—	5,061	2,759	5,800	14,697
Transport equipment .....	2,182	3,728	—	4,937	30,968	1,612	43,427
Miscellaneous manufactured articles .....	109	1,204	—	4,084	2,168	2,741	10,306
Commodities and transactions not classified to kind .....	786	277	—	1,248	2,901	4,134	9,347
Total .....	17,887	15,439	21,430	37,293	70,521	53,049	215,619

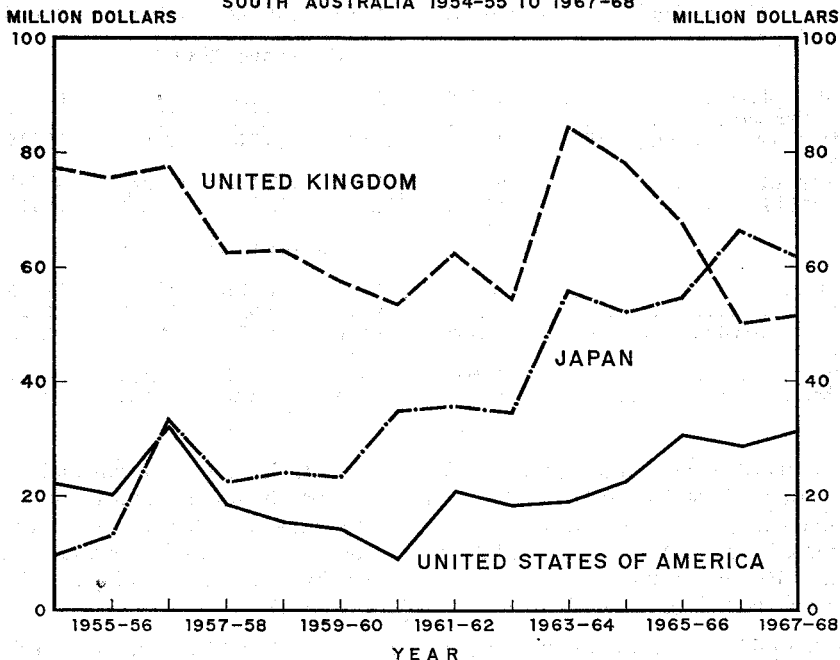
— Nil or less than \$500.

## EXPORTS

The total value of overseas exports from South Australia during 1967-68 was \$282.8 million, \$42.4 million below the 1966-67 record level of \$325.2 million, and the lowest since 1962-63 (\$212.9 million). Reduced quantities of wheat and barley and lower quantity and price for wool were the main reasons for the lower total value of exports.

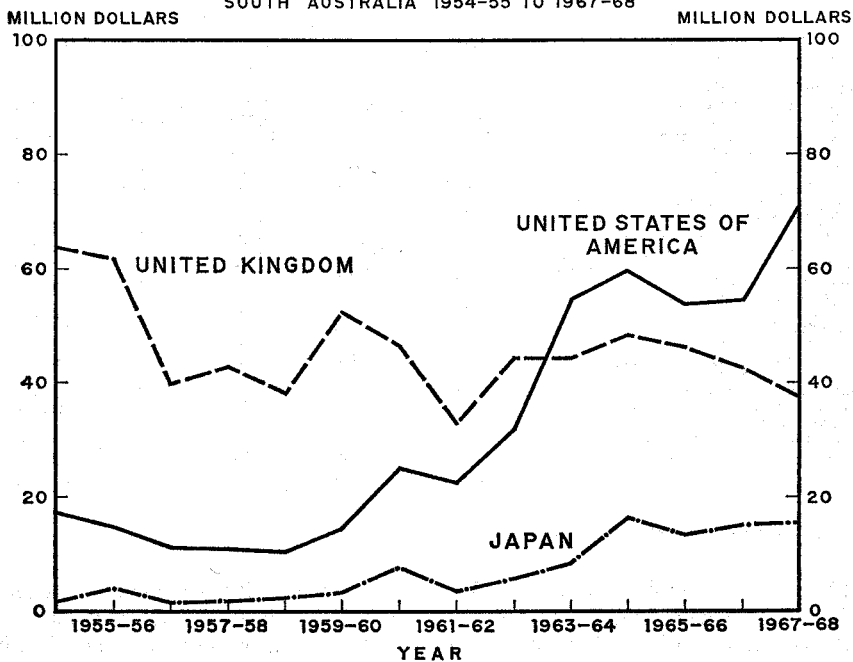
### OVERSEAS EXPORTS THREE PRINCIPAL COUNTRIES

SOUTH AUSTRALIA 1954-55 TO 1967-68



### OVERSEAS IMPORTS THREE PRINCIPAL COUNTRIES

SOUTH AUSTRALIA 1954-55 TO 1967-68



## Overseas Exports from South Australia: Principal Commodities

Commodity	1963-64	1964-65	1965-66	1966-67	1967-68
QUANTITIES ('000)					
Wheat (bushel) .....	48,658	33,782	29,128	33,574	19,373
Barley (bushel) .....	13,450	12,894	6,202	11,357	1,760
Fruit; preserved and pulped (lb) .	28,613	29,809	46,340	49,029	75,538
Wool:					
Greasy (lb).....	163,298	164,358	172,439	173,563	160,531
Other (lb) .....	14,624	11,652	12,727	12,881	13,750
VALUE (\$'000)					
Wheat .....	70,704	48,107	41,855	52,082	28,876
Barley .....	13,828	15,247	7,050	13,056	2,321
Fruit; preserved and pulped ....	3,406	3,521	5,378	5,725	9,293
Wool:					
Greasy .....	95,037	83,410	84,932	88,110	68,374
Other.....	12,360	9,124	9,555	9,904	8,633

Exports of manufactured goods are increasing both in absolute terms and as a proportion of total exports but the bulk of exports is still of goods normally classified as primary products. In 1967-68 the 'Food and live animals' group accounted for \$65.8 million, or 23.3 per cent of exports (including wheat \$28.9 million, 10.2 per cent) and 'Crude materials, inedible' for \$136.3 million, or 48.2 per cent (including wool \$77.0 million, 27.2 per cent).

In the table which follows, figures for years before 1966-67 should be regarded as estimates only.

## Overseas Exports from South Australia: Principal Commodity Groups

Commodity Group	1963-64	1964-65	1965-66	1966-67	1967-68
\$'000					
Food and live animals:					
Meat and meat preparations .....	4,365	4,569	5,771	8,275	9,223
Dairy products and eggs .....	3,901	3,841	3,739	4,396	4,396
Cereal grains and cereal preparations .....	91,098	69,757	53,534	69,987	34,243
Fruit and vegetables .....	12,106	12,122	14,107	12,733	14,761
Other .....	2,463	2,717	4,298	3,313	3,198
Beverages and tobacco .....	2,817	3,608	3,607	3,168	2,784
Crude materials, inedible (except fuels):					
Hides and skins .....	9,705	8,322	9,132	8,616	6,573
Textile fibres and their waste .....	107,446	92,632	94,565	98,061	77,045
Metalliferous ores and metal scrap .....	28,331	37,767	38,970	41,229	50,089
Other .....	2,259	2,362	2,354	2,534	2,544
Mineral fuels, lubricant .....	1,290	769	497	1,335	1,374
Animal and vegetable oils and fats .....	1,175	1,690	1,283	1,382	984
Chemicals .....	348	422	394	390	480
Manufactured goods:					
Iron and steel .....	998	1,078	2,762	11,476	10,925
Non-ferrous metals .....	36,876	43,903	41,668	37,100	41,760
Manufactures of metals, n.e.s. ....	(a)	552	(a)	2,872	2,226
Non-metallic manufactures .....	552	618	718	605	642
Machinery and transport equipment .....	14,937	14,236	15,709	15,275	16,337
Miscellaneous manufactured articles .....	357	486	366	903	983
Commodities and transactions not classified to kind .....	1,136	1,343	2,802	1,520	2,200
Total .....	322,159	302,242	296,275	325,170	282,767

(a) Included with machinery and transport equipment.

The following table shows the value of exports to principal countries during each of the years 1963-64 to 1967-68. Japan replaced United Kingdom as South Australia's principal export market in 1966-67 and retained that position in

1967-68, taking goods valued at \$61.7 million or 21.8 per cent of total exports. Shipments to United Kingdom, second in size of market for the last two years, have gradually declined from a peak of \$111.0 million (45.1 per cent of total) in 1952-53 to \$51.5 million (18.2 per cent) in 1967-68. Exports to United States of America during 1967-68 (\$31.2 million, 11 per cent) were the highest since 1956-57 (\$32.1 million, 13 per cent).

### Overseas Exports from South Australia: Principal Countries

Country of Consignment	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Belgium-Luxembourg	10,565	14,513	11,533	13,307	9,368
Canada	4,029	4,585	4,617	4,571	5,417
China, Republic of—Mainland	9,879	6,670	6,321	1,460	6,242
France	16,622	12,140	15,032	12,696	10,015
Germany, Federal Republic of	8,914	8,217	10,592	7,813	8,974
India	6,597	6,368	4,565	10,526	12,116
Italy	9,957	6,250	8,650	13,387	7,115
Japan	55,799	52,033	54,462	66,430	61,684
Kuwait	1,506	2,099	2,343	4,300	1,539
Lebanon	5,914	779	78	4,382	1,477
New Zealand	15,332	15,293	17,450	15,299	14,268
Norway	6,077	4,071	81	5,009	3,268
Saudi Arabia	1,477	2,037	1,536	4,098	5,761
South Africa	2,650	3,355	5,795	9,034	4,359
United Kingdom	84,460	78,014	67,594	50,278	51,450
United States of America	19,004	22,633	30,716	28,776	31,180
U.S.S.R.	17,441	22,505	4,675	3,595	3,443
Other	45,936	40,680	50,236	70,209	45,091
Total	322,159	302,242	296,276	325,170	282,767

Exports to principal countries during the year 1967-68 classified by commodity groups are shown below.

### Overseas Exports from South Australia to Principal Countries Commodity Groups, 1967-68

Commodity Group	France	India	Japan	New Zealand	United Kingdom	U.S.A.	Other	Total
	\$'000							
Food and live animals:								
Meat and meat preparations	41	—	2,066	—	1,517	4,762	837	9,223
Dairy products and eggs	—	28	1,429	—	2,338	—	601	4,396
Fish and fish preparations	94	—	40	—	—	1,336	398	1,868
Cereal grains and cereal preparations	—	4,705	158	3	558	—	28,819	34,243
Fruit and vegetables	200	—	30	1,200	4,272	404	8,655	14,761
Other	—	39	14	11	92	—	1,174	1,330
Beverages and tobacco	—	13	17	296	1,163	30	1,265	2,784
Crude materials, inedible:								
Hides, skins and fur skins	4,237	2	167	—	187	84	1,896	6,573
Textile fibres and their waste	5,329	1,916	23,557	126	8,031	7,284	30,802	77,045
Metalliferous ores and metal scrap	—	555	21,401	4	16,698	3,443	7,881	49,882
Other	3	—	436	758	116	209	1,025	2,547
Mineral fuels and lubricants	—	—	105	667	1	—	601	1,374
Animal and vegetable oils and fats	—	186	3	—	31	24	740	984
Chemicals	5	—	1	293	49	215	124	687
Manufactured goods classified chiefly by material:								
Iron and steel	—	46	4,634	1,536	22	748	3,939	10,925
Non-ferrous metal manufactures	—	4,581	7,504	1,135	13,638	10,856	4,046	41,760
Other	18	2	8	461	648	455	1,272	2,864
Machinery and transport equipment:								
Machinery, other than electric	18	4	35	413	51	75	1,470	2,066
Electrical machinery and appliances	15	—	1	323	23	95	492	949
Transport equipment	—	31	12	6,765	1,243	23	5,248	13,322
Miscellaneous manufactured articles	—	—	64	128	367	37	387	983
Commodities and transactions not classified to kind	54	8	2	149	404	1,202	381	2,200
Total	10,015	12,116	61,684	14,268	51,450	31,180	102,053	282,767

— Nil or less than \$500.

**Exports of Wool**

In 1960-61 Japan replaced the United Kingdom as the principal market for wool exported from South Australia, and in 1967-68 approximately 31 per cent of wool exports went to Japan compared with little more than 13 per cent to United Kingdom. Exports of wool to U.S.S.R. and to Mainland China show marked fluctuations during the periods covered in the table below.

**Overseas Exports of Wool from South Australia**

Country of Consignment	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Belgium-Luxembourg .....	5,824	5,489	4,010	5,491	3,511
China, Republic of—Mainland ..	3,448	1,425	281	585	29
France .....	8,902	6,125	8,064	6,839	5,329
Germany, Federal Republic of ..	4,864	4,700	5,436	5,286	5,645
Italy .....	5,880	3,512	4,999	5,219	4,685
Japan .....	35,014	25,404	34,319	34,157	23,556
Poland .....	1,818	1,827	2,512	2,818	2,391
United Kingdom .....	19,014	15,504	10,671	10,123	8,031
U.S.A. ....	4,514	6,357	9,024	7,364	7,284
U.S.S.R. ....	3,508	8,181	1,808	3,592	3,442
Other .....	14,610	14,011	13,362	16,539	13,105
Total .....	107,396	92,535	94,486	98,013	77,008

**Exports of Wheat**

The total amount of wheat exported from South Australia fluctuates considerably from year to year, depending on the success of the harvest. The value of wheat exported was at a record level in 1963-64 while the volume in 1967-68 was the lowest for five years.

The principal countries of consignment also fluctuate; large quantities of wheat were shipped to United Kingdom in 1963-64 and to U.S.S.R. in both 1963-64 and 1964-65.

**Overseas Exports of Wheat from South Australia**

Country of Consignment	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
China, Republic of—Mainland ..	6,378	4,904	5,922	11,308	6,212
India .....	1,506	1,244	—	1,009	4,698
Iran .....	468	5,736	2,561	1,009	—
Iraq .....	2,462	1,028	68	2,514	—
Lebanon .....	5,904	752	—	4,359	1,463
Malaysia (a) .....	117	377	2,262	1,571	3,934
Norway .....	5,804	3,904	—	4,664	3,041
Saudi Arabia .....	960	1,110	877	2,577	3,704
South Africa .....	—	3	3,317	5,584	—
South Arabia, Federation of .....	1,732	2,097	2,801	2,459	—
United Kingdom .....	22,430	8,716	9,910	2,675	312
U.S.S.R. ....	12,716	14,324	2,867	—	—
Other .....	10,227	3,912	11,270	12,353	5,512
Total .....	70,704	48,107	41,855	52,082	28,876

(a) Singapore included for 1964-65. — Nil or less than \$500.

## TRADE AT PRINCIPAL PORTS

The following table shows the value of imports and exports at the principal ports during each of the years 1963-64 to 1967-68.

Over 80 per cent of imports are unloaded at Port Adelaide but the proportion of exports loaded there is much lower and in recent years has been less than 60 per cent. Exports from Port Pirie principally comprise pig-lead, concentrates and ores (the produce of Broken Hill) and wheat. Shipments of wheat, and to a lesser extent barley, constitute the major part of exports from Port Lincoln, Wallaroo, Ardrossan and Thevenard, while the principal commodity exported from Port Augusta is copper concentrate from the Northern Territory.

## Value of Overseas Trade: Principal Ports, South Australia

Port	1963-64	1964-65	1965-66	1966-67	1967-68
IMPORTS (\$'000)					
Cape Thevenard .....	—	—	—	2	—
Port Adelaide (a) .....	171,373	197,968	162,775	164,301	186,289
Port Augusta .....	2	6	1	1	—
Port Lincoln .....	1,231	1,284	1,361	1,740	2,432
Port Pirie .....	1,306	316	52	713	1,157
Port Stanvac .....	(b)	(b)	22,666	24,600	23,594
Wallaroo .....	776	1,038	1,146	1,119	791
Whyalla .....	4,963	4,244	10,155	4,295	1,102
Total .....	179,651	204,856	198,156	196,771	215,365
EXPORTS (\$'000)					
Ardrossan .....	10,283	9,686	7,094	9,069	524
Cape Thevenard .....	7,129	7,540	4,566	7,706	7,055
Edithburgh .....	372	182	101	117	44
Port Adelaide (a) .....	193,406	172,398	177,068	185,908	164,752
Port Augusta .....	4,503	5,742	4,693	9,596	2,544
Port Lincoln .....	24,965	16,628	16,720	24,566	12,658
Port Pirie .....	64,364	77,908	77,641	66,882	77,414
Port Stanvac .....	(b)	(b)	336	1,251	1,192
Wallaroo .....	16,390	10,842	5,546	8,323	4,161
Whyalla .....	747	1,316	2,511	11,752	12,423
Total .....	322,159	302,242	296,276	325,170	282,767

(a) Includes 'Parcels Post, Adelaide'; 'Adelaide City (including Adelaide Airport)'; Port Stanvac prior to 1965-66, and from 1965-66 Stenhouse Bay. (b) Included in Port Adelaide. — Nil or less than \$500.

Some details of vessels entered and cleared at various South Australian ports are given on pages 519-20.

## CUSTOMS AND EXCISE DUTY

Excise duty is levied on specific goods of Australian manufacture, principally for the purpose of raising revenue. Although these excise goods do not form a part of overseas trade, the rate of excise duty is in some cases related to the import duty on similar goods.

The following table gives details of the value of customs duty and excise duty collected in South Australia during the years 1965-66, 1966-67 and 1967-68.

## Customs and Excise: Net Revenue, South Australia

Customs Tariff and Excise Tariff Item	1965-66	1966-67	1967-68
		\$'000	
CUSTOMS			
Live animals; animal products.....	51	54	55
Vegetable products.....	76	69	41
Animal and vegetable oils and fats.....	76	105	104
Prepared foodstuffs; beverages, vinegar; tobacco:			
Spirituos and alcoholic preparations.....	816	1,087	1,274
Tobacco, cigarettes, etc.....	1,127	875	886
Other.....	130	142	174
Automotive spirit and other mineral products.....	1,276	1,716	244
Chemicals and products thereof.....	266	293	299
Plastics, resins, rubber and manufactures thereof.....	605	569	604
Hides, skins, leather and articles thereof.....	58	73	89
Wood and wicker.....	1,110	913	1,276
Paper-making material; paper and paper manufactures..	258	295	319
Textiles.....	1,190	1,010	1,108
Footwear, sunshades, whips, artificial flowers, etc. ....	90	126	176
Earthenware, cement, china, etc. ....	496	486	588
Pearls, precious stones and metals, imitation jewellery, coin, etc. ....	37	27	27
Base metals and articles thereof.....	965	969	1,077
Electrical and mechanical machines and machinery ....	3,141	2,772	3,167
Transport equipment and parts therefor.....	1,924	2,274	3,411
Optical, surgical and scientific instruments, etc. ....	320	330	409
Arms and ammunition and parts therefor.....	57	73	51
Miscellaneous manufactured articles.....	419	446	434
Works of art, antiques, etc. ....	1	1	—
Other customs revenue.....	240	248	208
Primage.....	274	275	279
Total net customs and primage duties.....	15,002	15,228	16,300
EXCISE			
Petroleum products.....	20,980	22,625	24,447
Spirits.....	3,316	3,614	4,023
Tobacco, cigars and cigarettes.....	14,110	15,184	17,054
Other.....	23,889	24,466	26,183
Total net excise duties.....	62,295	65,889	71,707
Total net customs, primage and excise revenue	77,297	81,117	88,007

— Nil or less than \$500

Because a new Australian Customs Tariff was introduced in July 1965 figures comparable with the dissection in the preceding table are not available for earlier years. However, the totals of net Customs and Excise revenue for the last five years appear in the table of Commonwealth Taxation on page 546.

## 10.3 PRICES

## MEASUREMENTS OF PRICE MOVEMENTS

The prices of a wide range of commodities and services are collected at regular intervals by the Commonwealth Statistician for the purpose of compiling various price indexes or for publication of series showing actual price levels.



Price indexes aim to measure the degree of change in price levels, or more specifically the proportionate change in the aggregate price, of specified quantities and qualities of a specified list of items. Because these indexes measure changes through time it is traditional for presentation purposes to select a certain year, known as the base year, to equate the average aggregate price (of the list of items) in that year to 100 or some other suitable number, and to adjust other years on a proportionate basis.

When index numbers for different places are compared (*e.g.* Consumer Price Index, Capital Cities) the only legitimate comparison is the relative change *i.e.* that prices increased or decreased more in one place than another: even when a common base year is used the actual levels of prices, equated to 100 in each case, may differ substantially from place to place; in addition, selected items, qualities or weights (see below) may differ from place to place.

In constructing a price index it is necessary to limit attention to a selected list of items because it would clearly be impossible to determine at regular intervals the price of all items entering into a given field of expenditure (*e.g.* household expenditure in the case of the Consumer Price Index). The list of items selected must be as representative as possible of the field to be covered and consist of items for which price variations can be ascertained accurately at regular intervals. Each item must be assigned a relative importance (weight) in approximate proportion to actual expenditures on that item within the total field of expenditure being considered. Particular care must be taken to detect, assess, and make allowance for changes in quality of selected items.

Over time it becomes necessary to substitute new grades, qualities or types of articles for those formerly used as indicators of price movements in an effort to keep an index representative of current conditions. These substitutions can normally be achieved without injury to the index. From time to time major changes in the overall pattern of expenditure are noted, and in the past these have prompted the abandonment of an existing index in favour of a different index, the composition and weighting of which was more representative of expenditure at that time.

#### RETAIL PRICE INDEXES

The earliest retail price index was the 'A' Series Index. First compiled in 1912, it covered food, groceries, and house rents. The 'A' Series Index was used for wage adjustment purposes by the Commonwealth Court of Conciliation and Arbitration from 1913 until 1933 when for these purposes it was replaced by the 'C' Series Index.

The 'C' Series Index was first compiled in 1921 and involved a much wider coverage than the 'A' Series Index. Included were food and groceries, rent of four and five roomed houses, clothing, household drapery, household utensils, fuel, lighting, fares, and smoking, as well as other miscellaneous items.

In 1925 a separate index was prepared from the food, groceries and rent components of the 'C' Series Index. Known as the 'B' Series Index, it replaced the 'A' Series Index for general statistical purposes.

A further index, the 'D' Series, derived by combining the 'A' and 'C' Series Indexes, was used by the Commonwealth Court of Conciliation and Arbitration during 1933-34.

Between 1934 and 1953 the Commonwealth basic wage was automatically adjusted each quarter for price variations. Early adjustments were made in

accordance with movements in the 'C' Series Index, but from 1937 special 'Court' Indexes were issued by the Industrial Registrar, these in fact being arithmetical conversions of the 'C' Series Index.

By the end of the 1939-45 War the 'C' Series Index had been in use for twenty-five years and its weighting was considerably out of date, even though it had been slightly revised in 1936. Wartime controls, including rationing had caused recurrent changes in consumption, and the pattern of household expenditure which emerged with the abolition of control in 1948 pointed to the need for complete revision of the weighting of the 'C' Series Index. However, not only had household expenditure changed over the war years, but it was proving increasingly volatile in the early post-war period. This suggested the need for an index with a greater adaptability to change than the 'C' Series Index with its relatively fixed weights. For example, as the post-war trends for home ownership and private motoring developed it became desirable to give increased weight to these items.

The immediate problem of the inappropriateness of the 'C' Series weighting was countered by the introduction of the Interim Index in 1954. A transitional measure based on the 'C' Series model, it embraced a wider range of commodities and services than did the 'C' Series Index. Compilation of the 'C' Series Index, however, continued until 1960 and details of its movement between 1901 and 1959 are given in the Statistical Summary on page 606.

The more fundamental problem of taking into account successive major changes in the pattern of expenditure and modes of living was left to the Consumer Price Index, which succeeded the Interim Index in 1960.

### Consumer Price Index

The Consumer Price Index is a quarterly measure of variations in the retail prices of certain goods and services which make up a high proportion of the expenditure of wage-earner households. Rather than a single index, it consists of a chain of linked indexes each representing a significant variation in composition and/or weighting. The weighting patterns adopted relate to an estimated aggregate expenditure for all wage-earner households, and not to some estimated expenditure of a single household. In this way it is possible to give representation to certain major expenditures which relate to some households and not others.

The Consumer Price Index was compiled for the first time in 1960, and retrospective calculations have been made dating back to 1948. This involved the linking of six indexes, with significant changes in composition or weighting introduced at the June Quarter 1952, June Quarter 1956, March Quarter 1960, December Quarter 1963 and December Quarter 1968. The principal changes involved were:

- (a) the introduction of private motoring (1952), of television (1960), of furniture (1963), and of services by dentists, doctors, hospitals and health insurance funds (1968),
- (b) alterations in the proportions of houses under various modes of occupancy (1952, 1956, 1963 and 1968), and
- (c) changes in the weights of fuel and fares (1952, 1956, 1963 and 1968) and of private motoring (1956 and 1963).

From the December Quarter 1968 the Index has been recalculated using weights based on the pattern of consumption of the years 1962-63 to 1966-67 with 1966-67 as the base year.

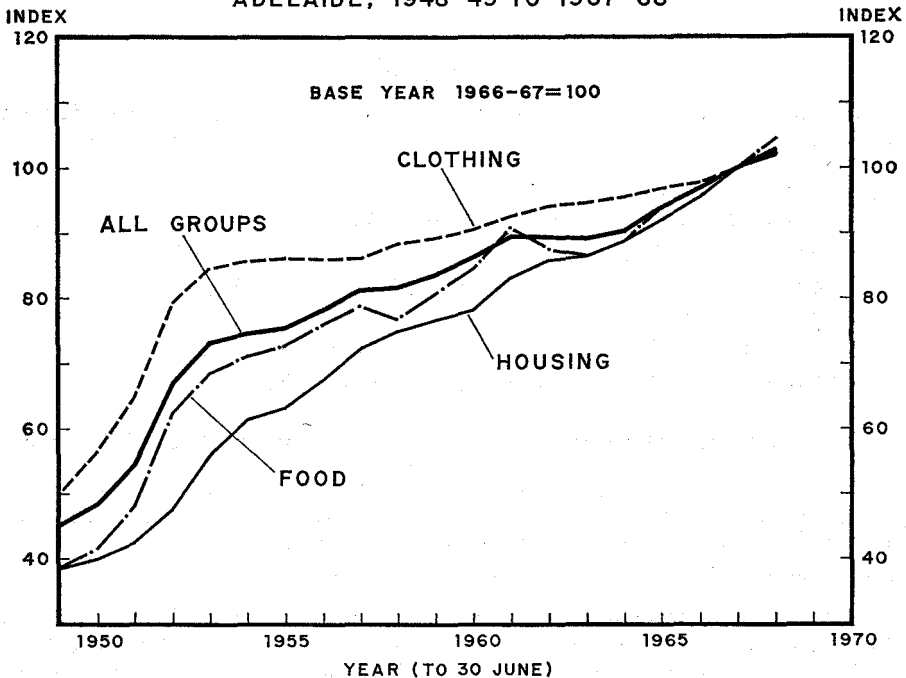
The wide range of commodities and services in the Consumer Price Index are arranged in five major groups, with index numbers compiled for each of these groups as well as a total for all items. Index numbers for Adelaide for these individual groups and for 'all groups' are recorded in the next table.

**Consumer Price Index<sup>(a)</sup>, Adelaide**

Year	Food	Clothing and Drapery	Housing	Household Supplies	Miscellaneous	All Groups
1958-59 .....	80.7	89.2	76.7	98.1	80.4	83.6
1959-60 .....	84.6	90.5	78.3	99.0	83.3	86.2
1960-61 .....	90.9	92.7	83.2	99.1	85.1	89.8
1961-62 .....	87.7	94.1	85.9	99.7	85.5	89.5
1962-63 .....	86.6	94.6	86.7	99.2	85.3	89.1
1963-64 .....	88.8	95.5	88.7	97.5	85.8	90.2
1964-65 .....	93.9	96.9	92.1	98.0	90.9	93.9
1965-66 .....	97.1	97.8	95.7	99.2	95.7	97.0
1966-67 .....	100.0	100.0	100.0	100.0	100.0	100.0
1967-68 .....	104.7	102.2	102.1	100.3	102.6	102.9

(a) Base year 1966-67 = 100.0

## CONSUMER PRICE INDEX ADELAIDE, 1948-49 TO 1967-68



The 'all groups' index for Adelaide is shown in the following table with that for each of the other capital cities. It is emphasised that these numbers show trends in the index within each individual city, but they do *not* measure differences in price levels between cities, and the Consumer Price Index should *not* be regarded as a 'cost of living' index.

Consumer Price Index<sup>(a)</sup>, Adelaide and Other Capital Cities

Year	Sydney	Mel- bourne	Brisbane	Adelaide	Perth	Hobart	Six State Capital Cities	Canberra
1958-59.	84.6	82.9	82.1	83.6	83.2	84.1	83.6	85.8
1959-60.	86.5	85.3	84.2	86.2	84.8	85.6	85.7	87.6
1960-61.	89.6	89.5	87.1	89.8	87.9	90.3	89.2	90.3
1961-62.	90.0	89.8	88.4	89.5	88.2	90.7	89.6	91.6
1962-63.	90.4	89.7	88.7	89.2	88.6	90.7	89.7	91.8
1963-64.	91.4	90.3	89.6	90.2	89.8	91.7	90.6	92.5
1964-65.	94.5	94.0	93.0	93.9	92.5	94.6	94.0	95.3
1965-66.	97.7	97.4	97.5	96.9	96.1	98.0	97.4	98.1
1966-67.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68.	103.2	103.7	103.3	102.9	102.9	104.6	103.3	102.6

(a) Base year 1966-67 = 100.0

### OTHER PRICE INDEXES

The Commonwealth Statistician prepares and publishes the following indexes on an Australian basis but details are not available for individual States:

Price of Agricultural Production,  
 Price of Dairy, Poultry and Bee Production,  
 Price of Pastoral Production,  
 Farm Production: Prices at Principal Markets, Australia,  
 Export Price Index,  
 Wholesale Price Index of Electrical Installation Materials,  
 Wholesale Price (Basic Materials and Foodstuff) Index.

In addition the Reserve Bank of Australia maintains an Import Price Index.

For the four 'production' fields listed above, and for imports and exports, both quantum and price indexes are available. Substantially a quantum index is derived by valuing the relevant components at constant prices, *i.e.* at average prices applicable to the base year or period of years.

For some time there has been increasing demand for price indexes relevant to various sectors of the economy. The first of these indexes, Wholesale Price Indexes: Price Index of Materials Used in Building other than House Building,

has been prepared and details appear in the Recent Information section of this publication. This index provides data for each State and for Australia.

## COMMODITY PRICES

## Retail Prices of Food

The next two tables show, respectively, the average retail prices of selected food items in Adelaide during recent years and the prices of those items in the various Australian capital cities in December 1968. Items included are those which are considered identical or sufficiently comparable from place to place to warrant publication of comparative prices: even so, in the second table meat prices are averages for a quarter, not prices at a point of time, because of variations in the quality of meat.

Average Retail Prices of Selected Food Items, Adelaide

Item	Unit	1964	1965	1966	1967	1968
		Cents				
Groceries:						
Bread (a) .....	2 lb	14.7	15.0	16.0	16.9	17.2
Self-raising flour .....	2 lb	15.0	14.6	15.3	15.5	16.4
Tea .....	$\frac{1}{2}$ lb	31.2	31.0	31.3	31.1	30.9
Sugar .....	1 lb	9.1	9.1	9.2	9.9	10.6
Rice .....	1 lb	12.7	12.7	12.8	12.9	13.7
Jam, plum .....	$1\frac{1}{2}$ lb	27.0	27.4	29.1	30.2	31.4
Peaches, canned .....	29oz	25.7	26.5	27.6	27.7	28.0
Potatoes .....	7 lb	40.6	57.5	33.7	40.5	49.9
Onions, brown .....	1 lb	8.0	8.4	10.3	7.1	11.5
Dairy products:						
Butter, factory .....	1 lb	47.8	48.5	48.9	49.3	49.9
Cheese, processed .....	$\frac{1}{2}$ lb	22.8	22.6	23.4	24.6	24.7
Eggs, large .....	doz	55.6	59.6	65.5	62.8	62.6
Bacon, rashers .....	$\frac{1}{2}$ lb	36.8	39.7	41.5	46.8	48.1
Milk; fresh, bottled (a) .....	quart	16.9	17.5	18.0	18.1	19.0
Meat:						
Beef;						
Sirloin (without bone) .....	1 lb	47.0	52.5	56.7	59.1	62.1
Rump steak .....	1 lb	70.9	79.4	86.1	94.1	101.9
Sausages .....	1 lb	21.1	22.9	24.7	25.5	26.6
Corned silverside .....	1 lb	47.9	53.3	57.7	60.6	63.1
Lamb;						
Leg .....	1 lb	40.4	43.7	43.1	45.6	44.3
Forequarter .....	1 lb	24.9	27.4	26.5	28.3	26.8
Loin chops .....	1 lb	46.3	51.4	51.7	54.9	53.2
Mutton;						
Leg .....	1 lb	27.8	29.2	30.9	33.4	33.2
Forequarter .....	1 lb	15.8	17.2	18.7	19.7	19.4
Loin chops .....	1 lb	27.3	28.9	30.6	32.9	33.2
Pork;						
Leg .....	1 lb	59.2	56.7	57.3	63.9	67.1
Chops .....	1 lb	59.5	57.5	57.8	64.6	67.4

(a) Delivered.

**Average Retail Prices of Selected Food Items, Australian Capital Cities,  
December 1968**

Item	Unit	Sydney	Mel- bourne	Brisbane	Adelaide	Perth	Hobart	Canberra
Cents								
<b>Groceries:</b>								
Bread (a) .....	2 lb	20.0	19.0	19.0	19.0	19.0	20.0	21.0
Self-raising flour .....	2 lb	19.6	18.8	17.3	16.6	18.4	20.9	20.5
Tea .....	½ lb	30.8	31.1	30.8	30.8	30.6	33.3	31.6
Sugar .....	4 lb	44.0	42.1	42.6	41.9	40.5	44.4	45.1
Rice .....	1 lb	15.0	14.8	14.4	14.2	14.9	15.3	15.2
Jam, plum .....	1½ lb	29.5	33.3	24.8	32.3	29.4	28.5	31.2
Peaches, canned .....	29 oz	30.6	29.0	31.5	27.8	33.2	30.4	31.9
Potatoes .....	7 lb	65.8	70.1	57.9	56.2	42.4	56.5	66.9
Onions, brown .....	1 lb	8.4	11.0	6.0	9.2	7.6	9.8	9.4
<b>Dairy Products:</b>								
Butter, factory .....	1 lb	51.2	50.2	51.0	49.9	49.8	52.0	52.0
Cheese, processed .....	½ lb	24.2	23.6	24.9	24.3	25.1	24.0	23.6
Eggs, large .....	doz (b)	66.0	66.9	63.5	64.9	65.1	61.7	66.0
Bacon, rashers .....	½ lb	45.9	50.5	49.7	44.6	44.0	50.0	48.0
Milk; fresh, bottled (a) .....	quart	22.0	19.0	18.0	19.0	20.0	20.0	22.0
<b>Meat (c):</b>								
<b>Beef:</b>								
Sirloin .....	1 lb	63.7	62.5	59.8	(d)60.0	61.3	65.2	70.2
Rump steak .....	1 lb	91.0	108.9	78.9	101.1	97.3	90.6	110.0
Sausages .....	1 lb	27.1	31.5	26.1	26.8	23.8	31.0	29.0
Corned silverside ...	1 lb	51.7	63.0	55.7	63.4	57.3	63.1	59.3
<b>Lamb:</b>								
Leg .....	1 lb	39.9	39.7	47.1	39.9	45.6	48.7	43.6
Forequarter .....	1 lb	23.7	23.6	28.5	23.0	27.3	27.3	30.1
Loin chops .....	1 lb	40.6	42.4	49.6	46.2	45.1	49.3	47.6
<b>Mutton:</b>								
Leg .....	1 lb	30.2	27.7	33.1	31.9	31.2	27.7	36.2
Forequarter .....	1 lb	19.3	19.5	20.4	18.9	18.8	15.4	25.1
Loin chops .....	1 lb	26.8	26.7	32.0	31.8	26.4	25.3	33.5
<b>Pork:</b>								
Leg .....	1 lb	63.4	63.4	60.6	64.7	63.8	68.0	66.6
Chops .....	1 lb	57.7	66.0	58.9	64.9	64.8	68.3	65.7

(a) Delivered. (b) Adelaide, dozen 'large'; Hobart, dozen of '2oz'; elsewhere '24oz' dozen.

(c) Average for quarter ended December 1968. (d) Without bone.

### Other Commodity Prices

South Australian prices of agricultural products are shown in the table on page 397, and separate details of wheat, barley, wool, and livestock are given under the appropriate headings in Part 9.1.

### PRICE CONTROL

Following the outbreak of the 1939-45 War the Commonwealth Government, acting under the authority of the National Security Act, established price control in Australia. A Commonwealth Prices Commissioner was appointed and given extensive powers in the control of prices. The National Security Act expired at the end of 1946 but temporary legislation provided for the continuation of price regulation until the end of 1948.

During 1948 the Commonwealth Government held a referendum seeking authority for permanent control over prices and rents. However, the proposal was rejected and the States agreed to assume responsibility for price control. In South Australia the necessary machinery was created by the Prices Act of 1948. Provision was made for the retention of existing Commonwealth price regulation orders until altered in accordance with the Act.

The State Prices Commission determines prices for a wide range of controlled goods and services and investigates complaints concerning excessive prices for

goods and charges for services whether subject to price control or not. Special investigations are carried out on behalf of the Government and also in respect of complaints arising from hire-purchase transactions.

Amendments to the Prices Act have provided for the continuation of price control: an amendment in December 1968 covers the period to 31 December 1969.

### RENT CONTROL

Extensive rent control was introduced in South Australia at the beginning of the 1939-45 War, with the passing by the State Government of the Increase in Rent (War Restrictions) Act which pegged rents at the level prevailing at 1 September 1939. In 1942 this Act was replaced by the Landlord and Tenant (Control of Rents) Act. Although providing the same benchmark, this Act allowed the South Australian Housing Trust to determine a variation in rent, upon application by either the landlord or tenant, or in certain cases on its own initiative. An appeal against a Housing Trust determination could be made to a Local Court. From the beginning of 1943 to the end of 1962, 60,180 applications for rent determinations were dealt with by the Housing Trust, of which twenty-nine were varied by a Local Court.

Following an inquiry held in 1951 on the future of rent control, proportionate loadings were introduced to allow for increases in property costs since 1939. The gradual relaxation of rent control was achieved through periodic extensions of these loadings and through the exclusion of long-term leases from the provisions of the Act.

At the end of 1962 the Landlord and Tenant (Control of Rents) Act was replaced by the Excessive Rents Act, which currently provides that the tenant of any premises, except where a lease for a term in excess of three years exists, may apply to a Local Court to determine whether the rent is excessive.

### Sub-Standard Housing

To regulate the rents for sub-standard housing the Housing Improvement Act, 1940-1966 vests in the Housing Trust power to declare a house sub-standard, and fix a maximum rent on it for such time as the declaration remains in force.

Before formally declaring a property to be sub-standard, the Trust first notifies the owner of its intention. Upon notification of the Trust's intention the owner is given a period of at least two months during which time improvements may be made to the property. If, at the expiration of the time period, it is subsequently found that the property has not been satisfactorily improved, then it is customary for the Housing Trust to control the rent appropriate to the standard of accommodation provided.

## PART 11

# TRANSPORT AND COMMUNICATION

### 11.1 TRANSPORT

A network of sea, rail, road, and air services has been established between South Australia and the other States of Australia. Transport between the eastern States and Western Australia, and to a lesser extent Northern Territory, is made *via* South Australian services.

Distances between Adelaide and other Australian capital cities, and Darwin, are shown in the following table.

**Distances Between Adelaide and Other Capital Cities**

Method of Travel	Canberra	Sydney	Melbourne	Brisbane	Perth	Hobart	Darwin
	Miles						
Road (a) ..	751	889	462	1,518	1,699	—	2,004
Rail .....	1,006	1,079	483	1,692	1,622	—	—
Sea (b) ....	—	973	514	1,471	(c)1,343	756	(d)3,133
Air .....	614	743	407	1,222	1,377	799	1,719

(a) In some cases shorter but less popular routes are available.

(b) Distance in nautical miles. (c) Fremantle. (d) *Via* Fremantle.

The location of the population within the State, as described in Part 5.2, created the demand for transport services to the major centres, and rural settlement throughout most of the State was assisted by the early development of rail services and the construction of arterial roads. The extension or improvement of transport services in and near the metropolitan area has followed the rapid housing development in the post-war period.



**TRANSPORT CO-ORDINATION****TRANSPORT CONTROL BOARD**

The Transport Control Board was constituted under the Road and Railway Transport Act, 1930 which provided for the co-ordination of passenger and freight transport by railways and by vehicles used for carrying passengers and goods on roads, and for the control and licensing of persons operating such vehicles.

Under the provisions of the Road Maintenance (Contribution) Act, 1963 the Board ceased granting or renewing licences for the carriage of goods for hire as from 1 July 1964. Licences current at that date expired on 31 March 1968.

The Road and Railway Transport Act, 1930-1964 provides that 'any person may operate a vehicle for the carriage of goods for hire on any road in any part of the State'.

**Powers and Obligations**

Since 1 July 1964 when the Board ceased issuing licences for the transport of goods by road the main concentration of its activities has been upon rationalisation of passenger transport services with particular reference to co-ordination of road and railway passenger services. Subject to the approval of the Parliamentary Standing Committee on Public Works the Board may order the closing of a railway line, but before it does so it must be satisfied that other transport will be available.

The Board exercises control by declaring certain roads, outside a radius of ten miles from the G.P.O., to be controlled routes. Thereafter, a licence must be obtained before a vehicle can carry passengers for hire on any such route.

The Board is obliged to grant sufficient licences to ensure an adequate passenger motor service on every controlled route which is within fifty miles of the G.P.O. and is at any point more than three miles from a railway line.

**Operations of the Board**

Licences issued by the Board must specify the route or routes over which the licensee is permitted to operate vehicles and the amount payable for the licence. The Board may also specify the maximum number of vehicles which the licensee is allowed to operate and maximum rates to be charged for the carriage of passengers. Licences have a currency of five years but numerous special permits are issued for periods of twelve months or less.

At 30 June 1968 current licences totalled 49. Special annual permits included 109 charter coach, 238 hire car and 148 miscellaneous passenger permits while special permits for short periods issued during the year covered 2,843 passenger vehicles. The Board also registers persons and firms who book passengers on behalf of a licensee; at 30 June 1968 there were fifty-four such agents.

**Interstate Transport**

During the period before November 1954 the Board issued permits for interstate journeys, but after the Privy Council decision in that month interstate carriers enjoyed complete freedom of movement between the States. Early in 1957 an amendment to the Road and Railway Transport Act became operative and required owners of commercial vehicles (with a tare weight of 2.5 tons or more) not registered in South Australia to contribute towards the maintenance of roads. The legislation was challenged in the High Court and in September 1957 was declared invalid.

The Road Maintenance (Contribution) Act, 1963-1968 imposes a charge per ton mile on commercial goods vehicles of more than 8 tons load capacity using roads in South Australia.

### ROYAL COMMISSION

In May 1966 a Royal Commission on State transport services was appointed 'to enquire into and report upon and make recommendations as to:

- (1) All aspects of the transportation in South Australia of passengers and goods by railway, by road, by sea and by air. In particular;
  - (a) whether it is desirable in the public interest to control by law the transportation of passengers and goods by road, by railway, by sea and by air and if so in what respects and to what extent;
  - (b) whether, in the absence of control of transportation of goods, regular, adequate and economical transport services will be available to country towns and districts.
- (2) The differences existing in the cost of commodities as between the metropolitan area and country towns and districts, and in particular as to what proportion of such differences in country towns and districts is represented by the cost of freight, and to make recommendations as to what action, if any, should be taken to subject such differences to control, either under the provisions of the Prices Act, 1948-65, or by some other form of legislation.'

On 9 January 1968 the Commission signed its report and submitted it to the Government. Included in the recommendations was the proposal that the present Transport Control Board be abolished and replaced by a Department of Transport under a Commissioner who would be responsible to the Minister of Transport. The functions of the Department should include the issue of licences and permits and general control of transport, the registration of motor vehicles and all functions of the Motor Vehicles Department, and the administration of the Road Maintenance (Contribution) Act. It should also have power to control the transport, in South Australia, of passengers and goods by rail, road, sea and air. The Commission also suggested that a Transport Planning Board be set up to make recommendations on the planning and development of transport in South Australia, ways to improve transport and services, the closing of railway lines or establishment of new lines and curtailment of services, and co-ordinating capital works programmes for public transport. It further recommended that a greater share of road maintenance tax be allocated to country districts, particularly where sealed surfaces are not expensive, and also that the Road Maintenance (Contribution) Act be amended so that the relevant charges be paid in respect of vehicles exceeding four tons load capacity.

Other proposals included in the Commission's recommendations were that the Commissioner of Transport should control all transport rates and passenger fares; some night suburban rail passenger services be replaced by buses, and road transport replace some country rail passenger services; certain railways losses be charged to general revenue; grants to the railway from general revenue should be varied, and a grant should be made from this source to meet suburban passenger losses together with other grants as determined by the Treasurer.

Regarding the second aspect of the enquiry, insufficient evidence was placed before the Commission of any substantial difference in the cost of commodities between the metropolitan area and country towns and consequently no recommendations were made.

The Transport Control Board has continued to operate, having been brought under more direct ministerial supervision, and is being used to investigate some implications of the Commission's recommendations and to implement those which have been approved by the Government. Among the recommendations of the Commission which have been adopted are the licensing of a road passenger service between Adelaide and Whyalla, and the substitution of road transport for some country rail passenger services.

### RAILWAYS

In Part 8.4, railways in South Australia were discussed under the headings of ownership and control, and standardisation of railway gauges. It was mentioned that both the State and Commonwealth Governments operate railways in this State and that there are two privately-owned railways, from Iron Knob and Iron Baron to Whyalla, and from Coffin Bay to Port Lincoln. This section deals with the operation of the South Australian Railways as one means of transport within and to and from the State. In the *Official Year Book of the Commonwealth of Australia* the operations of the Commonwealth Railways in South Australia are included in figures for all Commonwealth Railways in Australia. No details are available on the operations of the private railways.

### SOUTH AUSTRALIAN RAILWAYS

Capital indebtedness (see definition on page 557) of the South Australian Railways at 30 June 1968 totalled \$141,201,000. Operations for 1967-68 resulted in a deficit of \$12,734,000 and after taking into account contributions from Consolidated Revenue totalling \$10,000,000 as an offset to increases in working costs and interest not covered by rises in freight rates and fares, there was a deficit of \$2,734,000. The following summary shows details of capital indebtedness, working expenses, and revenue for the past five years.

#### South Australian Railways: Capital Indebtedness, Working Expenses and Revenue

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Capital indebtedness .....	120,821	125,994	131,425	136,265	141,201
Working expenses .....	31,065	31,897	32,581	34,160	34,818
Revenue .....	29,673	29,960	29,137	30,417	28,244
Deficit on operating ...	1,392	1,937	3,443	3,744	6,574
Debt charges .....	4,958	5,191	5,567	5,835	6,160
Total deficit for year ...	6,350	7,127	9,011	9,579	12,734
Less contributions from Consolidated Revenue	8,000	8,000	8,000	8,000	10,000
Net surplus (+) or deficit (-) ..	+1,650	+873	-1,011	-1,579	-2,734

#### Sources of Revenue

For the five year period ending 30 June 1968 approximately 77 per cent of railways operational revenue was derived from carriage of freight and about 12 per cent from passenger traffic. During 1967-68 the approximate percentages were 75 and 13 respectively.

Increases in intrastate freight rates on grain from September 1966 and on livestock and all other commodities (except firewood) from October 1966 were

the first general increases in rates since 1960. As from 1 July 1968 a uniform classification of rates and conditions for the movement of inter-system goods traffic was adopted by the Commonwealth Railways authority and all State Railway authorities. However, some traffic on inter-system lines has been excluded from the application of the uniform rates; exclusions affecting South Australia relate to traffic between railway stations within South Australia, and between South Australian Railway stations and Central Australia Railway stations, Trans-Australian Railway stations and Broken Hill, and in these cases a combination of local, special or district and inter-system mileage rates applies. The new rates are generally lower than those previously applicable.

In March 1967 all inter-system passenger fares were increased for the first time since 1962. Suburban passenger fares were increased from 1 February 1969, the average level of increases being 13 per cent compared with 15 per cent for the previous increases on 1 October 1966.

The railways by-law rate structure was determined by the need to develop the country and this led to the philosophy of charging what the traffic would bear—charges were higher for expensive commodities than for cheap ones. This type of rate helped to subsidise those people who lived in sparsely populated areas which were served by developmental railways. In the past, losses from these services were recouped by charging higher rates on those lines which carried the greater volume of freight. To meet increased competition from road transport in recent years it has been necessary to introduce special freight rates on some lines. Sources of revenue and the amounts received for the years 1963-64 to 1967-68 are shown in the table below.

**South Australian Railways: Sources of Revenue**

Source	1963-64	1964-65	1965-66	1965-67	1967-68
	\$'000				
Country passengers.....	1,677	1,685	1,679	1,800	1,758
Suburban passengers .....	1,639	1,716	1,786	1,915	1,912
Parcels, mails, etc. ....	984	988	940	1,025	984
General merchandise and miscellaneous freight .....	11,891	12,444	11,960	11,861	11,489
Wool .....	489	369	245	194	149
Wheat .....	3,263	2,654	2,289	2,987	1,623
Livestock .....	1,039	954	851	673	708
Minerals .....	6,616	6,819	7,007	7,503	7,097
Rents and miscellaneous .....	1,238	1,467	1,418	1,415	1,452
Refreshment services and book-stalls .....	838	863	961	1,044	1,072
Total .....	29,673	29,960	29,137	30,417	28,244

In 1967-68 there was a marked decrease in earnings compared with those for 1966-67. This was largely because of the severe drought experienced in South Australia and to a reduction in tonnage of ores railed as a result of industrial disputes at Broken Hill. Removal during 1965-66 of most controls over the transport of goods and livestock has continued to result in decreased railway revenue from the more highly rated traffic. Revenue from road motor services amounted to \$197,949 in 1967-68 and is included in revenue from passengers, parcels, mails, etc. and miscellaneous freight.

Further details of passenger traffic and freight traffic which resulted in the revenue shown in the previous table, are set out in the following table.

### South Australian Railways: Passenger Journeys and Passenger Train Mileages 1963-64 to 1967-68

Year	No. of Passengers Carried		Passenger Train Mileage		Average Miles Each Passenger Carried		Average Earnings per Passenger Mile	
	Country	Suburban	Country	Suburban	Country	Suburban	Country	Suburban
	'000	'000	'000	'000	No.	No.	Cents	Cents
1963-64 .....	895	14,332	1,954	1,967	108.20	8.38	1.73	1.36
1964-65 .....	870	14,326	1,944	1,951	111.32	8.32	1.74	1.44
1965-66 .....	840	14,671	1,923	1,950	113.53	8.36	1.76	1.46
1966-67 .....	824	14,608	1,922	2,028	116.86	8.32	1.87	1.58
1967-68 .....	795	14,447	1,913	2,026	112.71	8.15	1.96	1.62

Note: 'Country' passengers carried includes all interstate passengers.

The number of passengers carried in 1942-43 was nearly 31 million persons, a substantial increase on the 17.6 million in 1939-40. Following a decline in the immediate post-war period, the number in 1949-50 settled at about the pre-war level, but since 1959-60, reflecting mainly the trend in suburban passenger traffic, has declined to between fifteen and sixteen million. Country passenger traffic has declined steadily since 1944-45.

Interstate passenger and freight services are operated in conjunction with interstate railways including the Commonwealth Railways—the Victorian Railways to Melbourne, Commonwealth and Western Australian Railways to Perth, and the Commonwealth Railways to Alice Springs. Sleeping accommodation and first and second class travel are available for interstate journeys. Interstate passengers carried on South Australian Railways are included under 'country' in the preceding table.

### South Australian Railways: Freight Carried

Freight	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
	'000 Tons						
Wool .....	45	44	45	36	29	23	18
Wheat .....	762	583	966	781	668	735	415
Barley .....	540	216	290	312	228	191	78
Livestock .....	179	181	152	142	118	87	92
Minerals .....	1,195	1,389	1,431	1,403	1,330	1,487	1,446
General merchandise .....	1,916	2,117	2,330	2,458	2,449	2,385	2,352
Number of tons carried	4,638	4,530	5,213	5,131	4,823	4,909	4,401
	'000						
Goods and livestock train mileage	2,733	2,771	2,745	2,687	2,619	2,634	2,479
	Cents						
Average earnings per ton-mile .	3.36	3.18	3.09	3.04	2.98	3.14	3.09

### Working Expenses

The cost of operating the South Australian Railways during 1967-68 was \$34,818,000 plus debt charges which amounted to \$6,160,000. The working expenses include the cost of administration, maintenance of permanent way, rollingstock maintenance and operation costs, salaries and wages of station

staff, guards and conductors. A comparison of working expenses for the last five years is given in the following table.

**South Australian Railways: Working Expenses**

Expenses	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Administration:					
Salaries, wages, expenses, etc...	870	924	996	1,090	1,137
Pay roll tax .....	445	467	483	513	525
Superannuation Act—Pensions.	1,084	1,114	1,122	1,207	1,239
Way and works:					
Maintenance and superintendence of permanent way, etc.	6,325	6,621	6,881	7,358	7,736
Rollingstock:					
General superintendence .....	210	224	224	253	254
Maintenance of rollingstock ..	5,880	5,771	5,865	5,903	5,917
Motive power, lubrication, etc..	5,002	4,916	4,877	4,923	4,803
Transportation and traffic:					
General superintendence, station staff, guards, etc. ....	8,136	8,685	8,880	9,441	9,591
Miscellaneous:					
Refreshment services, road motors, etc. ....	1,060	1,117	1,205	1,260	1,301
Stores:					
Salaries, wages, expenses .....	573	607	580	627	679
Depreciation (a) .....	1,481	1,451	1,468	1,585	1,635
Total .....	31,065	31,897	32,581	34,160	34,818

(a) Additional depreciation is included in 'Maintenance of rollingstock' and other accounts to cover depreciation of workshop machinery. The amount for 1967-68 was \$114,000

The average number of persons employed in operations and maintenance during 1967-68 was 8,057; this excludes those employed for special work.

### Debt Charges

These charges to the South Australian Railways have increased over the five-year period 1963-64 to 1967-68 because of additional loan funds made available for capital purposes and further advances provided under Railways Standardization and Railway Equipment Agreements. Higher interest rates also contributed to the increase in debt charges during 1967-68. Net funds provided from State Loan Fund were \$126,488,000 at 30 June 1968 as against \$116,846,000 at 30 June 1964.

The net amount on which the State was liable for interest and repayment under the Railways Standardization Agreement at 30 June 1968 was \$9,823,000, compared with \$3,213,000 at 30 June 1964. The total expenditure on standardisation to 30 June 1968 was \$38,263,000, of which \$36,362,000 was provided by the Commonwealth (30 per cent repayable by the State), and \$1,901,000 was contributed from the Consolidated Revenue of the State. Outstanding liability of the State to the Commonwealth under the Railway Equipment Agreement at 30 June 1968 amounted to \$712,000.

Debt charges for 1967-68 were:

	\$
Interest on Loan Funds provided for capital purposes (other than stores) including exchange on overseas debt . . . . .	5,497,833
Interest on Loan Funds invested in stores . . . . .	208,078
Interest under Railways Standardization and Railway Equipment Agreements . . . . .	454,034
	6,159,945

### Train Mileage and Track Open

The average length of track open for traffic during the year 1967-68 was 2,480 miles. During 1965-66 the Kapinnie-Mount Hope (9 miles) and the Wandana-Kowulka (47 miles) lines were closed and the Ceduna-Kevin (37 miles) line was opened, while in 1966-67 a two mile spur-line to Tonsley Park was opened. Possible closure of some country lines is discussed under the heading 'Rationalisation of Railway Services' on page 501. Train miles run during 1967-68 totalled 6,417,510. Capital cost of lines open and completed at 30 June 1968 was \$170,974,000.

The following table shows revenue and working expenses per train mile.

**South Australian Railways: Revenue and Working Expenses**

Year	Revenue	Working Expenses	Percentage of Working Expenses to Revenue	Train Mileage	Revenue per Train Mile	Working Expenses per Train Mile
	\$'000	\$'000	%	'000 Miles	\$	\$
1963-64	29,672	31,064	105	6,666	4.45	4.66
1964-65	29,960	31,897	106	6,582	4.55	4.85
1965-66	29,137	32,581	112	6,492	4.49	5.02
1966-67	30,417	34,160	112	6,584	4.62	5.19
1967-68	28,244	34,818	123	6,418	4.40	5.43

Train mileage was 6.8 million in 1942-43 but fell to about 6 million in 1946-47 and 1948-49. By 1952-53 train mileage had risen to 7.2 million but in recent years it has declined slowly to its present level. In general both revenue and working expenses per train mile have increased in recent years with working expenses per train mile showing the more rapid increase.

### Locomotives and Rollingstock

The development of traction in the South Australian Railways followed the pattern of development in other railway systems until early in the 1920s when more powerful steam locomotives, and goods wagons of greater capacity were introduced. The first main line diesel electric locomotive commenced operating in September 1951, and these, connected as twin units, haul loads of 1,000 tons over the Adelaide hills.

Concurrently with the introduction of diesel electric locomotives there has been considerable development in the field of railcars equipped with diesel engines arranged for multiple unit operation. When a comparison was made of the relative economies to be expected from the conversion of the suburban system to electric or diesel traction, it was determined that the multiple unit diesel trains offered greater economic advantages. The first multiple unit diesel train was brought into service in October 1955. Multiple unit diesel railcars have also been introduced into the country passenger services.

The extent of the change from steam to diesel electric locomotives and from petrol to diesel railcars since 1950 is revealed in the following table.

### South Australian Railways: Locomotives and Rollingstock

*At 30 June in selected years*

Particulars	1950	1955	1960	1965	1968
Number					
Locomotives:					
Steam .....	333	365	225	151	98
Diesel electric;					
Main line .....	2	12	30	41	49
Shunting and transfer...			12	21	39
General purpose .....			—	35	38
Total .....	335	377	267	248	224
Rail cars: Power;					
Diesel .....	—	—	118	134	133
Petrol .....	51	53	4	—	—
Rail cars: Non-power;					
Control equipped .....	—	—	7	7	7
Trailer .....	29	28	52	58	58
Coaches .....	515	485	353	243	203
Interstate coaches .....	47	54	61	71	68
Goods and livestock wagons .....	8,126	8,895	8,000	7,962	7,662
Service wagons and vans .....	465	478	467	526	488

The tonnage of various fuels consumed in locomotives and railcars during the years ended 30 June 1950, 1955, 1960, 1965 and 1968 was as follows:

### South Australian Railways: Locomotive Fuel Consumption

*At 30 June in selected years*

Fuel	1950	1955	1960	1965	1968
Tons					
Steam locomotives:					
Coal .....	263,000	199,868	78,861	20,411	3,650
Heavy oil .....	47,600	85,310	29,044	4,287	2,323
Diesel locomotives:					
Diesel oil .....	—	4,949	12,079	20,640	21,400
Rail cars:					
Petrol .....	n.a.	630	253	—	—
Diesel oil .....	—	814	8,175	8,528	8,465

n.a.—Not available.



**Accident Casualties**

Accident casualties to persons other than railway employees were recorded by the South Australian Railways for the years 1966-67 and 1967-68 as follows:

	1966-67	1967-68
Persons killed . . . . .	26	12
Persons injured . . . . .	52	61

The number of fatalities in 1966-67 was unusually high with twenty-two occurring at crossings compared with eleven in 1967-68.

**RATIONALISATION OF RAILWAY SERVICES**

On 7 May 1968 the Minister of Transport announced the Government's decision to carry out a programme of rationalisation of rail services. A number of existing passenger services were to be cancelled and, in some areas, replaced by either private or departmentally sponsored road passenger services. Subject to inquiry by the Transport Control Board and the Parliamentary Standing Committee on Public Works, some country rail lines were to be closed.

A departmentally sponsored bus service is one for which tenders are called by the South Australian Railways Commissioner and contracts let to private operators who undertake to provide services at times, fares and parcel rates specified by the Railways Department. Tickets can only be purchased at railway stations and the operator is paid on a mileage basis.

At 1 May 1969 rail passenger services cancelled and replaced by privately operated bus services were those between Adelaide and Eudunda, Kapunda, Angaston, Truro and Moonta; between Moonta and Kadina; and between Gladstone and Wilmington.

The service from Balaklava to Bowmans has been cancelled and not replaced by any alternative service. Passengers travelling between Bowmans and Adelaide and between Balaklava and Adelaide have services available on the lines to Port Pirie and Gladstone respectively. Departmentally sponsored bus services operate in co-ordination with these rail passenger services—one between Long Plains and Salisbury and the other between Virginia and Salisbury.

The Port Lincoln-Ceduna rail passenger service was cancelled on 1 September 1968 and a private bus service commenced on this route on 27 August 1968. The bus service is co-ordinated with the movements of the M.V. *Troubridge* which operates between Port Adelaide and Port Lincoln. At present there is no rail passenger service on Eyre Peninsula.

The Moonta-Brinkworth, Port Pirie-Peterborough and Peterborough-Quorn rail passenger services have been cancelled and not replaced by any departmentally sponsored alternative service. The bus service introduced to replace the Gladstone-Wilmington rail passenger service was extended to Quorn when the Peterborough-Quorn rail passenger service was cancelled. Investigation into the possible cancellation of rail passenger services on the Adelaide-Victor Harbor and Milang line has commenced.

At 1 May 1969, of the freight and livestock traffic lines recommended for closure, only the Hallet Cove-Willunga line had been closed: the Mount Barker Junction-Victor Harbor and Milang, the Wanbi-Yinkanie, and the Eudunda-Morgan lines had not been investigated.

## TRAMWAY AND OMNIBUS SERVICES

## MUNICIPAL TRAMWAYS TRUST

The Municipal Tramways Trust was incorporated by Act of Parliament in 1906. The Trust's activities are now regulated by the Municipal Tramways Trust Act, 1935-1965.

Exclusive powers are given to the Trust to:

- (1) operate tram systems propelled by electric energy within a radius of ten miles from the G.P.O.
- (2) carry passengers by motor omnibus for hire or reward on any route wholly or partially within the prescribed area as defined by the Act.
- (3) grant to any person a licence to carry passengers by motor omnibus for hire or reward on any route in (2) above.

In 1965 the prescribed area was extended to include the local government areas of Elizabeth and Salisbury and parts of Munno Para and Tea Tree Gully. Private bus operators within the prescribed area must be licensed by the Trust and the licence may stipulate such terms as duration of licence, routes, time tables and fares. Control is vested in a Board of five members all of whom are appointed by the Governor. Under the Act the State Treasurer is empowered to make grants to the Trust to enable it to meet the expenses incurred in the exercise of its functions.

**Historical Survey**

The first tramway in South Australia, from Adelaide to Kensington, was opened on 10 June 1878, this first tram service being horse drawn.

Horse drawn tramways were developed by the Adelaide & Suburban Tramway Company Ltd and six other companies with services eventually extending over routes totalling 51 miles. With the incorporation of the Municipal Tramways Trust in 1906 to provide electric traction for tramways, the operations of the former companies were taken over. The Kensington line was the first to be converted and was opened on 10 March 1909. Supplementary to the main electric tramways system motor bus services were introduced on 25 March 1925 and electric trolley buses on 5 September 1937.

During the 1939-45 War and the early post-war period renewal of rollingstock and tracks fell below requirements. In the years following, rising costs and loss of patronage associated with greater use of private cars contributed to the Trust suffering increasing financial losses. Amending legislation passed in 1952 gave the State Government a measure of financial control over the Trust's operations.

In 1953 the Board conducted a comprehensive review of the Trust's finances and affairs. Its conclusions were that if operating losses were to be reduced, considerable expenditure would be necessary to modernise capital equipment as a large part of the assets of the Trust had already reached the end of its economic life. A ten-year plan was drawn up to provide for the efficient rehabilitation and progressive development of the Trust. This plan incorporated the following main features:

- (1) Replacement of tram cars with diesel buses.
- (2) Erection of new parking and servicing depots.
- (3) Modernisation of the workshops.
- (4) Erection of new workshops.
- (5) Abandonment of electricity generation in favour of taking power from the Electricity Trust of South Australia.
- (6) Examination of all services and planning for the future needs of the metropolitan area.
- (7) Adoption of more efficient operating methods.

Because of the amount of expenditure contemplated and the nature of the transport problems involved, the Trust sought the assistance and views of a firm of consulting engineers in the United States of America. The report of these consultants largely confirmed the Trust's proposals. The plan, with slight modification, was subsequently completed more rapidly, and at less cost, than envisaged at first. New workshops were not built and the Glenelg tram service, which runs mainly on enclosed land rather than on public roadways, was retained.

All other tramcar routes were converted to diesel bus operation between 1953 and 1958. The future method of operation for the Glenelg services will depend upon circumstances existing at the end of the economic life of the present system. Electric trolley buses were replaced by diesel buses in July 1963. The task of taking up tram tracks and restoring roadways on abandoned tram tracks was completed during 1960-61. In broad terms the gross cost associated with this work was \$1,500,000 less the value of materials salvaged \$700,000, leaving a net cost of \$800,000.

### Income and Expenditure

A table showing capital indebtedness, income and working expenses etc. for the last five years is given in Part 12.4 Public Finance—Semi-Government Authorities. Income earned by the Trust exceeded working expenses each year until 1949-50, when income was \$2,934,000 and working expenses were \$3,184,000. The first grant of \$1,400,000 to the Trust was made by the State Treasurer in 1952-53; the amounts for the last ten years are shown in the following table.

**Municipal Tramways Trust: Income and Expenditure**

Year	Traffic Receipts	Sundry Receipts	Government Grants	Working Expenses	Interest on Loans	Net Deficit
\$'000						
1958-59	4,854	202	880	5,666	616	346
1959-60	5,528	112	188	5,568	602	342
1960-61	5,404	112	60	5,354	576	354
1961-62	5,290	140	60	5,212	556	278
1962-63	5,296	140	26	5,166	534	238
1963-64	5,320	154	60	5,194	516	177
1964-65	5,743	156	20	5,487	518	87
1965-66	5,880	170	20	5,806	505	241
1966-67	6,071	199	20	5,947	474	131
1967-68	6,009	215	20	5,879	431	65

At 30 June 1968 loan indebtedness amounted to \$8,668,000; these loans are secured by debentures issued to the Treasurer of South Australia.

### Working Expenses

Working expenses of the Trust were \$1,244,000 in 1940-41 and had nearly doubled by 1946-47 when they were \$2,402,000. In 1967-68 working expenses were \$5,879,000 as compared to the record of \$5,947,000 in 1966-67. Details for the last five years are given below.

### Municipal Tramways Trust: Working Expenses

Working Expense	1963-64	1964-65	1965-66	(a) 1966-67	(a) 1967-68
			\$'000		
Traffic operations .....	2,834	3,016	3,241	3,325	3,281
Maintenance .....	774	811	884	1,002	1,019
Power for traffic .....	40	37	37	34	30
Fuel and oil for traffic .....	284	259	254	256	251
Highways contribution .....	92	92	91	90	86
Depreciation .....	574	581	559	524	476
Other expenses .....	596	691	740	716	736
Total .....	5,194	5,487	5,806	5,947	5,879
			Cents		
Working expenses per traffic mile	45.26	47.85	51.22	52.90	55.10

(a) Some amounts previously allocated to traffic operations, power for traffic and other expenses are now allocated to maintenance.

Savings in power, fuel and oil have resulted from changes, already mentioned, which were introduced during the 1950s. Combined figures for power, fuel and oil costs in 1955-56 were \$661,000 compared with \$281,000 in 1967-68. The average number of persons employed by the Trust during 1967-68 was 1,403 (181 salaried and 1,222 wages staff), salaries and wages paid amounting to \$4,186,000.

### Route Miles, Mileage Run and Passengers Carried

Route mileage of electric tramways in 1921 measured 66 miles, increasing to 80 miles by 1944, and declining to the present 7 miles by 1958. Total route mileage was increased with the introduction of motor buses in 1925 and trolley buses in September 1937. With the change to diesel operation, route mileage of motor buses showed a marked increase. Trolley bus routes are now served by diesel buses. Total route mileage, 108 miles in 1938, showed a slight increase of 10 miles by 1944, and remained unchanged until the 1950s.

Traffic miles run totalled approximately 8 million miles in 1936-37 but had increased to 10 million miles by 1944-45. Mileage has varied between 10 and 12 million miles since that year.

In 1908-09 there were about 31 million passengers carried by the Trust. This number increased to 68.5 million by 1927-28, fell during the 1930s, but increased to 95 million by 1944-45. The number of passengers carried has declined steadily since 1947-48, e.g. 78 million in 1949-50, 69 million in 1954-55, 61 million in 1959-60 and 48 million in 1967-68.

**Municipal Tramways Trust: Route Miles and Traffic Mileage**

Year	Route Miles at End of Year				Mileage Run During Year			
	Electric rams	Motor Omnibuses	Trolley Buses	Total	Electric Trams	Motor Omnibuses	Trolley Buses	Total
					'000	'000	'000	'000
1956-57 ..	44	71	23	138	3,700	4,602	2,632	10,934
1957-58 ..	37	82	23	142	2,472	6,779	2,213	11,464
1958-59 ..	7	102	23	132	844	9,947	1,293	12,084
1959-60 ..	7	107	23	137	617	9,782	1,555	11,954
1960-61 ..	7	108	23	138	543	10,315	707	11,565
1961-62 ..	7	112	23	142	510	9,486	1,352	11,348
1962-63 ..	7	115	23	145	497	10,234	704	11,435
1963-64 ..	7	141	—	148	498	10,956	23	11,477
1964-65 ..	7	141	—	148	495	10,972	—	11,467
1965-66 ..	7	142	—	149	486	10,849	—	11,335
1966-67 ..	7	142	—	149	471	10,772	—	11,243
1967-68 ..	7	150	—	157	419	10,247	—	10,666

**Municipal Tramways Trust: Passengers and Fares**

Year	Passengers Carried	Traffic Revenue	Traffic Mileage	Average Fare	Traffic Revenue per Traffic Mile
	'000	\$'000	'000	Cents	Cents
1963-64 ..	58,571	5,320	11,477	8.92	46.38
1964-65 ..	56,434	5,743	11,467	10.00	51.44
1965-66 ..	53,112	5,880	11,335	10.89	53.37
1966-67 ..	49,735	6,071	11,243	12.01	55.77
1967-68 ..	47,813	6,009	10,666	12.34	58.36

**Rollingstock**

The change from electric traction to diesel operation is reflected in the following table which shows details of rolling stock in selected years.

**Municipal Tramways Trust: Rollingstock and Seating Capacity**

*At 30 June (a)*

Particulars	1945	1950	1955	1960	1965	1968
<b>Rollingstock:</b>						
Electric trams ...	304	279	178	30	30	26
Motor omnibuses	65	81	140	364	353	325
Trolley buses ...	52	61	91	56	—	—
<b>Total vehicles</b>	<b>421</b>	<b>421</b>	<b>409</b>	<b>450</b>	<b>383</b>	<b>351</b>
<b>Seating capacity:</b>						
Electric trams ...	15,370	14,280	10,147	1,908	1,908	1,664
Motor omnibuses	2,341	3,998	5,268	14,428	14,112	13,142
Trolley buses ...	2,712	2,984	4,184	2,006	—	—
<b>Total seating</b>	<b>20,423</b>	<b>21,262</b>	<b>19,599</b>	<b>18,342</b>	<b>16,020</b>	<b>14,806</b>

(a) 31 January in 1945 and 1950.

**Accident Casualties**

The following casualties resulted from accidents which occurred during the last two years:

	1966-67		1967-68	
	Killed	Injured	Killed	Injured
Passengers .. . . .	—	121	—	120
Employees .. . . .	—	118	—	85
Others .. . . .	1	21	2	24
Total persons .. . . .	1	260	2	229

**PRIVATE MOTOR OMNIBUS SERVICES****Metropolitan Services**

Since 1941 route mileage of private motor omnibuses licensed by the Municipal Tramways Trust has increased by more than five times from 46.40 miles in 1941 to 250.55 miles in 1967-68, while the number of passengers carried has increased by more than six times from 2.3 million to 15.4 million. A large part of the increase in the number of passengers carried occurred in the ten years from 1941 (2.3 million) to 1951 (10.7 million).

The Municipal Tramways Trust grants licences to private bus operators to carry passengers within the prescribed area. During 1965-66 this area was extended to include the Cities of Elizabeth and Salisbury and parts of the local government areas of Munno Para and Tea Tree Gully. Consequently, 1965-66 and subsequent figures shown in the following table are not comparable with those for earlier years.

**Private Motor Omnibuses, Metropolitan Services**

Year	Route Mileage	Mileage Run	Passengers Carried	Rolling Stock	Traffic Receipts (Gross)
	Miles	'000 Miles	'000	No.	\$'000
1963-64 ..	143.14	3,563	10,926	124	1,068
1964-65 ..	145.09	3,600	10,511	132	1,166
1965-66 (a)	244.55	5,147	13,693	217	1,645
1966-67 (a)	249.45	5,963	14,956	224	1,971
1967-68 (a)	250.55	6,156	15,400	225	2,083

(a) Relevant area enlarged during 1965-66, see text above.

**Interstate and Country Services**

Regular interstate bus services and special tours operate to all States. There are co-ordinated passenger rail and bus services on a number of additional routes.

**TAXI-CABS**

The Metropolitan Taxi-Cab Act, 1956 provided for the control of taxi-cabs in the prescribed area of Adelaide, and for incidental purposes, and set up the Metropolitan Taxi-Cab Board to administer the Act. The present Act is The Metropolitan Taxi-Cab Act, 1956-1965.

The granting of licences or permits to operate taxi-cabs within the metropolitan area was within the power of each of the metropolitan councils until the Board assumed control on 1 April 1958. It also took over the allotment of vehicles to stands and the charging of permit fees. The Board decided on one general taxi licence but portions of the Municipalities of Adelaide, Port Adelaide and Glenelg were to be restricted areas. Taxis operating in the Adelaide restricted area were issued with distinctive plates, and those in the Port Adelaide and Glenelg areas with numbers distinguishable from those applicable to the unrestricted areas.

The metropolitan area, under the 1956 Act, included that part of the State which is within ten miles of the G.P.O. Adelaide, and that part of the municipality of Port Adelaide outside that area. The metropolitan area was extended to include the District Council of Stirling in March 1959, the District Council (now City) of Tea Tree Gully in October 1963, and the District Council of Salisbury and Elizabeth in June 1964. (The latter council is now the separate municipalities of the City of Elizabeth and the City of Salisbury.)

In April 1967 new regulations relating to open hailing of taxis in the metropolitan area were approved. These removed many of the restrictions which previously existed concerning area of operation and use of taxi stands. However, taxi-cabs at present licensed for the Salisbury and Elizabeth areas must remain 'pegged' to the stands within the municipal boundaries of those areas, but after dropping a fare outside of those areas the driver must head back in the direction of Salisbury and Elizabeth and if available for hire must accept a hail and proceed to any required destination within a twenty-five mile radius of the Adelaide G.P.O.

Regulations under the Act provide for the examination of taxi-cabs: the roadworthiness of all taxi-cabs is examined by the Police Department each year and the Board's inspectors check and test all meters. It is compulsory for taxis to be fitted with meters which record progressively the cost of each journey at rates prescribed from time to time. The area in which these metered charges apply is determined by the Board and is known as the 'metered zone'. This zone was extended on 1 May 1969 to include Outer Harbor and other districts, including Blackwood and portions of Tea Tree Gully. Outside of this zone but within an area of twenty-five miles radius from the G.P.O. Adelaide, a 50 per cent loading, equal to 9 cents a mile is charged. Prior to 1 May 1969 this 50 per cent surcharge operated on some journeys to and from Outer Harbor and the municipalities of Elizabeth and Salisbury; this charge was abolished when the boundary of the metered zone was altered. For journeys which extend beyond the twenty-five mile radius contract rates, not to exceed 15 cents per outward and return mile, are charged.

Licences issued at 30 June 1968 included taxi-cabs, white plates (*i.e.* restricted) 250, green plates 548; hire cars 38; and funeral cars 8. Drivers' licences current totalled 2,363 including 12 women's licences.

Revenue received during 1967-68 was \$25,742 from taxi licences, \$840 from hire car licences and \$9,479 from drivers' licences. Total revenue from all sources was \$49,635, and expenditure was \$49,132.

In February 1969 Executive Council approved increases for taxi and private hire vehicles licence fees, taxi licence fees increasing by \$2 to \$34 and for private hire vehicles from \$19 to \$34.

## MOTOR VEHICLES

### Control of Road Traffic

Legislation covering the registration of motor vehicles, licensing of drivers, third party insurance, and general rules to be observed by road users (including pedestrians) in South Australia, was contained in the Road Traffic Act, 1934-1958. In December 1959 legislation on registration, licensing, and third party insurance, was passed under the Motor Vehicles Act, 1959 and similar provisions were repealed from the Road Traffic Act. The present legislation for the control of road traffic in South Australia is set out in the Road Traffic Act, 1961-1967 and the Motor Vehicles Act, 1959-1968.

The Road Traffic Act, 1961-1967 provides for the administration of the Act; contains provisions for the duties of drivers and pedestrians, equipment, size and weight of vehicles and safety; and supplementary provisions. The Act is administered by the Road Traffic Board of South Australia.

### Registration of Motor Vehicles

Under the Act 'motor vehicle' means (a) a vehicle, tractor, or mobile machine driven or propelled or ordinarily capable of being driven or propelled by a steam engine, internal combustion engine, electricity or any other power not being human or animal, or (b) a trailer; but does not include a vehicle run upon a railway or tramway.

The Registrar of Motor Vehicles controls registration and 'a person shall not drive a motor vehicle on a road unless that vehicle has been registered under this Act and the registration thereof is for the time being in force'.

The Act provides for certain exemptions from registration, *e.g.* vehicles with traders plates, vehicles carrying persons or firefighting equipment to prevent or control a fire, vehicles taking part in processions, etc. A tractor may be driven without registration on roads within 25 miles of a farm occupied by the owner of the tractor, when taking delivery after purchase, to and from a workshop for repairs, to draw farm implements, etc.

Permits to use vehicles, without registration, between farm blocks may be granted by the Registrar. A 14-day permit to drive a motor vehicle pending registration may be issued, under certain circumstances, by a member of the police force stationed at a police station more than 25 miles from the G.P.O. Adelaide. The Act provides for other exemptions and permits.

Unless an application for registration is accompanied by a certificate of third party insurance, to cover the period of registration plus fourteen days, the Registrar will not register the vehicle. Registration is for a period of six or twelve months at the option of the applicant and according to the fee paid.

Registration fees vary according to the power-weight of a motor vehicle. This is calculated by adding the weight of the vehicle in hundredweights to its rated horsepower. The registration fee for a trailer is based on its unladen weight. Registration fees are higher for motor vehicles fitted with solid rubber or metal tyres.

Motor vehicles used for certain purposes are registered without fee, *e.g.* vehicles owned by the Fire Brigades Board and other fire fighting organisations, ambulances for the use of which no charge is made, council vehicles used solely or mainly for the collection and transport of household rubbish, etc. Registration



at reduced rates is allowed for primary producers' commercial vehicles and tractors, prospectors' vehicles, and to vehicles used wholly or mainly in outer areas. Reduced rates are also available to incapacitated ex-servicemen. Vehicles used solely for interstate trade can be registered for \$2 for a period of twelve months.

The Act provides for registered vehicles to carry number plates and for a registration label to be affixed to each registered vehicle. It also provides for the issue of general traders plates and limited traders plates. In January 1967 the first number plates in the new alpha-numero series were issued.

### Motor Vehicles on Register

The following table shows the number of motor vehicles on the register at 31 December from 1964 to 1968.

#### Motor Vehicles on Register, South Australia

At 31 December

Type of Vehicle	1964	1965	1966	1967	1968
Cars .....	245,732	257,233	267,596	276,415	287,389
Station wagons .....	32,893	38,681	43,373	47,536	51,138
Utilities .....	38,633	38,468	38,352	38,013	37,478
Panel vans .....	10,474	10,959	11,318	11,503	11,837
Trucks .....	34,002	33,421	33,748	33,254	33,468
Motor cycles and scooters .....	14,019	12,708	12,007	12,509	12,993
Other .....	2,896	3,101	3,315	3,540	3,776
<b>Total on Register .....</b>	<b>378,649</b>	<b>394,571</b>	<b>409,709</b>	<b>422,770</b>	<b>438,079</b>
<b>Population per vehicle .....</b>	<b>2.78</b>	<b>2.74</b>	<b>2.70</b>	<b>2.65</b>	<b>2.59</b>
Tractors, plant, equipment, etc. (a)	4,845	4,842	4,885	6,579	6,776
Trailers and caravans .....	69,008	73,011	77,599	82,499	85,074
Traders' plates .....	2,630	2,898	2,825	2,849	2,897

NOTE: Includes Commonwealth owned vehicles except defence services vehicles.

(a) Self-propelled vehicles only. Non-self-propelled plant and equipment are included with trailers and caravans.

### New Motor Vehicle Registrations

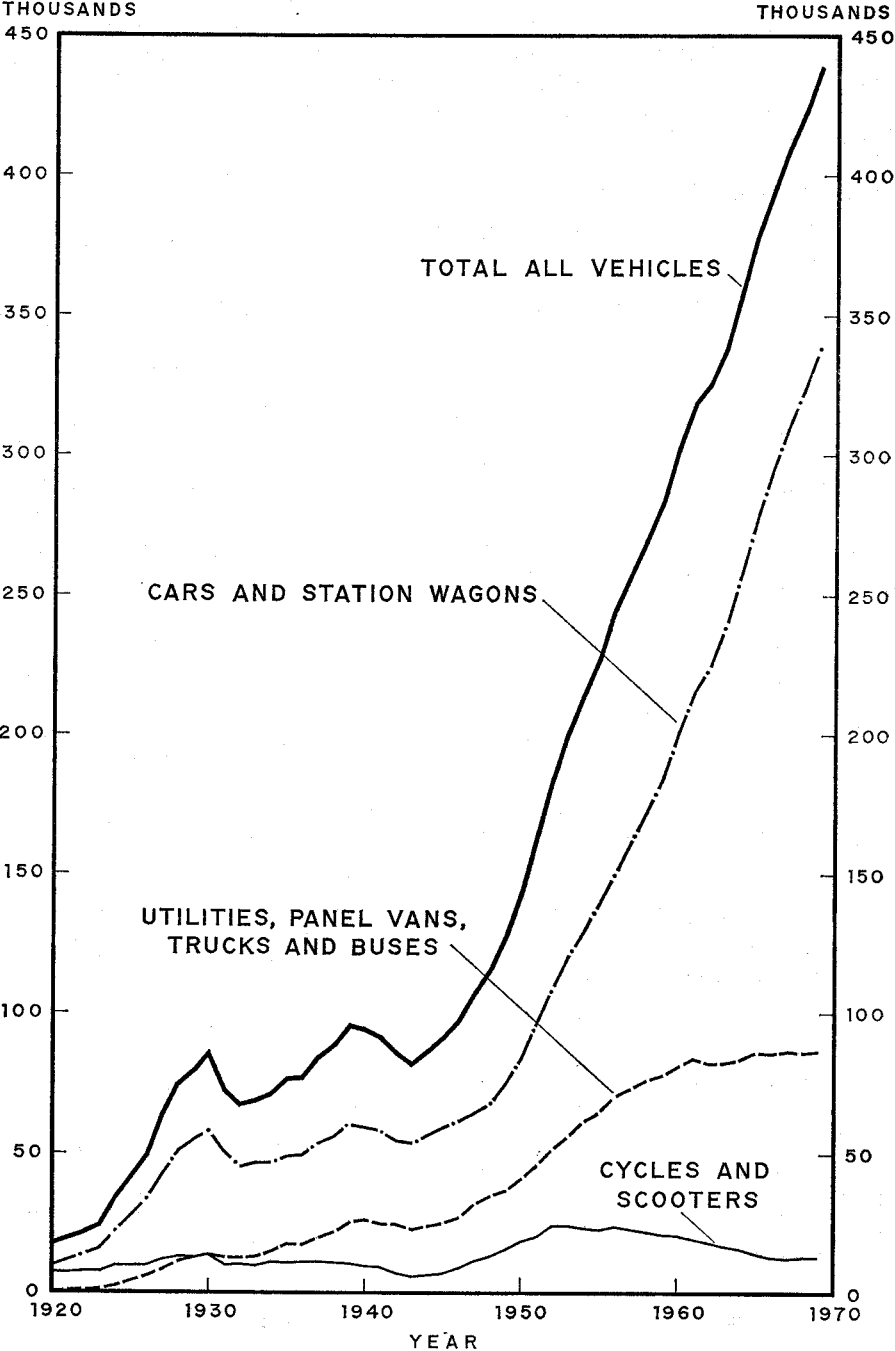
New motor vehicle registrations during the calendar years 1964 to 1968 are shown in the following table.

#### New Motor Vehicle Registrations, South Australia

Type of Vehicle	1964	1965	1966	1967	1968
Cars .....	26,328	27,567	23,762	25,339	29,424
Station wagons .....	7,960	6,601	4,982	4,811	4,598
Utilities .....	3,087	3,213	2,882	2,866	2,831
Panel vans .....	1,069	1,012	978	949	999
Trucks .....	2,651	2,411	1,946	1,882	2,151
Motor cycles and scooters .....	1,006	1,090	1,097	1,595	1,940
Other .....	296	330	305	276	336
<b>Total .....</b>	<b>42,397</b>	<b>42,224</b>	<b>35,952</b>	<b>37,718</b>	<b>42,279</b>

NOTE: Excludes road tractors and trailers; includes Commonwealth owned vehicles except defence services vehicles.

MOTOR VEHICLES ON REGISTER  
SOUTH AUSTRALIA 1919 TO 1968



In the following table new motor vehicle registrations are classified by horsepower (R.A.C.).

**New Motor Vehicle Registrations, Classified by Horsepower (R.A.C.)  
South Australia**

Type of Vehicle and Horsepower	1964	1965	1966	1967	1968
<b>Cars:</b>					
Under 10 .....	1,869	897	178	134	188
10-14 .....	5,608	6,535	4,886	4,839	4,271
15-19 .....	3,065	4,320	4,475	6,096	9,030
20-24 .....	696	529	611	537	650
25-29 .....	8,866	8,321	7,000	5,714	4,838
30 and over .....	6,223	6,965	6,612	8,018	10,447
Not stated .....	1	—	—	1	—
<b>Total .....</b>	<b>26,328</b>	<b>27,567</b>	<b>23,762</b>	<b>25,339</b>	<b>29,424</b>
<b>Station Wagons:</b>					
Under 20 .....	686	484	214	254	480
20-29 .....	4,215	3,258	2,560	2,157	1,552
30 and over .....	3,059	2,859	2,208	2,400	2,566
Not stated .....	—	—	—	—	—
<b>Total .....</b>	<b>7,960</b>	<b>6,601</b>	<b>4,982</b>	<b>4,811</b>	<b>4,598</b>
<b>Utilities:</b>					
Under 20 .....	311	378	265	198	361
20-29 .....	2,074	2,067	2,008	1,851	1,488
30 and over .....	702	768	609	816	982
Not stated .....	—	—	—	1	—
<b>Total .....</b>	<b>3,087</b>	<b>3,213</b>	<b>2,882</b>	<b>2,866</b>	<b>2,831</b>
<b>Trucks:</b>					
Under 20 .....	105	138	167	203	236
20-29 .....	784	641	491	429	475
30-39 .....	1,277	1,115	966	845	886
40-49 .....	357	391	243	213	364
50 and over .....	128	126	79	192	190
<b>Total .....</b>	<b>2,651</b>	<b>2,411</b>	<b>1,946</b>	<b>1,882</b>	<b>2,151</b>

**NOTE:** Includes Commonwealth owned vehicles except defence services vehicles.

### Drivers Licences

Under the relevant section of the Motor Vehicles Act two classes of drivers licences are issued:

**Class A:** to drive motor vehicles of any kind.

**Class B:** to drive motor vehicles of any kind which do not exceed three tons.  
Some of these are endorsed for the driving of motor cycles only.

The Act provides that an applicant must apply for a permit to learn to drive a motor vehicle and will be issued with a learner's permit once he has passed

a written examination on the rules of the road. The permit is for a period not exceeding three months during which time he is expected to undergo a practical test conducted by a police officer appointed for the purpose. If he passes the test he will be issued with a certificate stating the type and make of vehicle used and that he was capable of driving this class of motor vehicle. He may then apply to the Registrar for the appropriate licence, *i.e.* a class A or B licence.

Provision is also made for the testing of drivers suspected of being incompetent or suffering from a disease or disability which may impair their ability to drive, and for the suspension of their licences should they fail the test. Persons who will reach the age of 70 years during the currency of their next licence are tested before that licence is issued: a Class B licence is issued to persons passing this test unless they have been tested in a vehicle exceeding three tons.

The fee for a class A or B licence is \$2 and for a learner's permit \$1. Licences and permits are not issued to persons under sixteen years of age.

In 1961, motor driving instructors licences were introduced and made compulsory where instruction was given for reward. The licence fee is \$20 for a period of three years.

Drivers' and riders' licences current at 31 December 1968 totalled 491,165. The number in force first exceeded 100,000 in 1931, totalled 215,157 by 1951, 315,044 by 1957, and had risen to 447,985 at December 1965.

### **Revenue from Registrations and Licences**

Revenue from registration fees and drivers' and riders' licence fees totalled \$12,653,000 in 1968. These fees are paid into Consolidated Revenue Account but after deductions have been made for sinking fund and interest on loans raised for roads and bridges, and the administration expenses of the Highways and Motor Vehicles Departments, the balance is paid into the Highways Fund.

### **Third Party Insurance**

Part IV of the Motor Vehicles Act, 1959-1968 provides that 'a person shall not drive a motor vehicle on a road unless a policy of insurance complying with this Part is in force in relation to that vehicle'. This does not apply to farmers' tractors when exempted from registration or tractors used for roads and firebreaks.

The policy of insurance must be issued by an approved insurer and must 'insure the owner of the motor vehicle mentioned in the policy and any other person who at any other time drives that vehicle, whether with or without the consent of the owner, in respect of all liability for negligence which may be incurred by that owner or other person in respect of the death of, or bodily injury to, any person caused by or arising out of the use of the vehicle in any part of the Commonwealth'.

An 'approved insurer' means a person or body of persons approved by the Treasurer. It is not obligatory to insure any vehicle owned by the Crown and used solely in the public business of the State, or to insure vehicles owned by the Municipal Tramways Trust.

The Act sets out the liabilities of insurers and these include the liability to pay for emergency treatment and hospital treatment to a person injured (including fatally injured) by or arising out of the use of an insured motor vehicle.

Where the driver of a motor vehicle has caused death or bodily injury in the use of that vehicle and the identity of the vehicle cannot be ascertained, then a person who could have obtained a judgment against the driver may give notice to the Treasurer and recover by action against a 'nominal defendant' named by the Treasurer. Payment by the 'nominal defendant' will be paid out of money contributed by an association of insurers to a scheme under section 119 or by the Treasurer, if no such scheme is in operation.

The Treasurer will appoint a 'nominal defendant' where a claim is made by a person in respect of death or a bodily injury caused by negligence in the use of an uninsured motor vehicle on a road. Payments made by the 'nominal defendant' are recoverable from the driver of the motor vehicle or any person liable for the negligence of that driver.

The Act provides that an injured person may claim against his or her spouse, where the spouse is an insured person and has caused that person bodily injury by negligence in the use of a motor vehicle.

The Act sets out the right of an insurer against the unauthorised user of a vehicle, the power of an insurer to deal with claims against the insured, and the duty of the insured not to litigate or negotiate a claim without the consent of the insurer.

Upon the recommendation of the Treasurer, the Governor may appoint a committee to inquire into and report what maximum rates of premiums are fair and reasonable for third party insurance.

From February 1967 premiums for private and business cars in the metropolitan area have been \$27.50 per year and in the country \$25.00, for taxis \$140 and \$50, and for goods-carrying vehicles, \$29.50 and \$21.00 respectively. In March 1969 premiums for goods-carrying vehicles in the metropolitan area were increased to \$32.00 and for primary producers' trucks from \$5.50 to \$9.00.

During 1967-68, third party insurance premiums received amounted to \$11,067,000 and claims paid were \$7,036,000.

### Census of Motor Vehicles

A census of motor vehicles on the register at 31 December 1962 was completed in Australia during 1963 from particulars of motor vehicle registrations. An earlier census was conducted at 31 December 1955.

The following table shows the number of vehicles of each type in South Australia at 31 December 1955 and 1962. In addition, in 1962 there were 4,463 tractors, heavy equipment, and industrial vehicles, and 57,525 trailers on the register; corresponding details are not available for 1955.

Further tables on the 1962 Census containing classifications of vehicles by year of model, horsepower, etc. are given in the bulletin *Census of Motor Vehicles*, 31 December 1962, Bulletin No. 4—South Australia, published by the Commonwealth Statistician.

## Types of Motor Vehicles, South Australia, 1955 and 1962

Type of Vehicle	1955		1962	
	Number	Proportion to Total Vehicles	Number	Proportion to Total Vehicles
		%		%
Motor cars:				
Sedans .....	127,582	52.20	211,387	62.53
Convertibles and open cars ....	21,432	8.77	7,773	2.30
Taxis, hire cars .....	(a)	(a)	650	0.19
Ambulances, hearses .....	(a)	(a)	192	0.06
Other .....	148	0.06	8	0.00
Total motor cars ....	149,162	61.03	220,010	65.08
Station wagons .....	1,344	0.55	18,895	5.59
Utilities .....	33,837	13.84	38,539	11.40
Panel vans .....	5,256	2.15	9,678	2.86
Trucks:				
Table top, platform .....	24,561	10.05	23,571	6.97
Van-type .....	480	0.20	686	0.20
Tipper .....	3,150	1.29	4,917	1.46
Articulated, semi-trailer .....	1,340	0.55	2,205	0.65
Horse float, other trucks .....	134	0.05	305	0.09
Total trucks .....	29,665	12.14	31,684	9.37
Other truck-type:				
Tankers .....	462	0.19	351	0.10
Concrete agitators .....			82	0.02
Tow trucks .....			62	0.02
Fire-fighting units, etc. ....			487	0.15
Total other truck-type .....	462	0.19	982	0.29
Omnibuses .....	973	0.40	1,580	0.47
Motor cycles:				
Solo, motor scooters .....	23,704	9.70	15,205	4.49
Side car .....			1,008	0.30
Auto cycle .....			481	0.14
Other .....			23	0.01
Total motor cycles ...	23,704	9.70	16,717	4.94
Total motor vehicles ..	244,403	100.00	338,085	100.00

NOTE: Includes Commonwealth owned vehicles except defence services vehicles.

(a) Included with sedans or other.

## Vehicle Usage

In November 1963 a postal sample survey of motor vehicle usage was conducted throughout Australia. The timing of the collection and the specification of the form were such that details can be taken as representative of usage in the calendar year 1963. A summary of results obtained for South Australia is set out below.

It should be borne in mind that since results are obtained from a sample they are not precise and should be considered as approximations only. In addition, total fuel consumption calculated from the survey appears low in comparison with other available information. The deficiency appears to be of the order of



*Department of Marine and Harbors*

These silos and jetty for the bulk loading of grain built at Port Giles, near Edithburgh on Yorke Peninsula, will be completed early in 1970.

The roll-on roll-off ship m.v. *Troubridge* approaching Port Lincoln. This ship operates intrastate services between Port Adelaide, Port Lincoln and Kingscote.

*Department of Marine and Harbors*



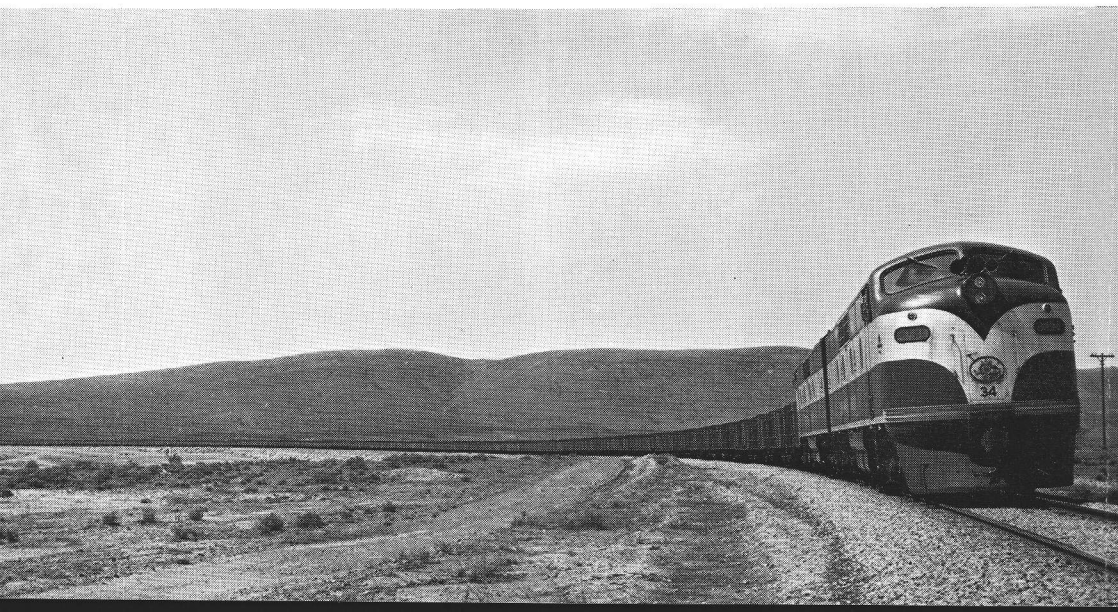




Whyalla News  
The 'Cellana', built at Whyalla, on sea trials.

A Commonwealth Railways train of 80 wagons and a brakevan transporting 3,400 tons of coal from Leigh Creek to Port Augusta. The train, nearly three-quarters of a mile long, is hauled by two 1850 hp diesel-electric locomotives.

*Commonwealth Railways*





15 to 20 per cent; a possible explanation is a tendency, particularly among car owners, to overstate average mileage per gallon.

### Motor Vehicle Usage <sup>(a)</sup>, South Australia, 1963

Type of Vehicle	Average Annual Mileage per Vehicle	Average Fuel Consumption (b)	Business Mileage as a Proportion of Total Mileage
	Miles	M.P.G.	%
Cars and station wagons .....	8,180	25.5	25.0
Utilities and panel vans .....	8,370	20.3	75.1
Trucks, with carrying capacity of:			
Less than two tons .....	5,400	13.2	97.3
Two tons but less than three tons .....	4,860	11.7	98.3
Three tons but less than five tons .....	5,860	10.3	99.1
Five tons and over; rigid .....	10,400	8.7	99.4
Five tons and over; articulated .....	29,550	6.7	100.0

(a) Excludes defence services vehicles.

(b) May be overstated—see text above.

For cars and station wagons in South Australia (excluding dealer-owned vehicles) the average annual mileage was 7,760 for those registered at a metropolitan address and 9,330 for those registered at a non-metropolitan address. Corresponding figures for the whole of Australia were 8,770 and 8,760 respectively.

### Road Traffic Board

The Road Traffic Board of South Australia is a body set up in 1960 under the provisions of the Road Traffic Act, 1961-1967. Its functions are specified in Section 15 of the Act and can be briefly stated as making investigations and recommendations to the Minister in relation to road safety measures (including the use of traffic control devices) as well as having responsibility for the collation and analysis of accident data in connection with traffic engineering matters.

### Road Traffic Accidents

Statistics of road traffic accidents are compiled from reports made to members of the South Australian Police Department by persons involved in such accidents. Section 43 of the Road Traffic Act sets out the obligations of the driver of a vehicle involved in an accident—he must stop his vehicle at once, state his name and address if requested to any person having reasonable grounds for such request, and report the accident to the Police as soon as possible or at least within twenty-four hours of the accident. However, it is a defence to the non-reporting of an accident if it can be proved that the only damage or injury resulting from the accident was to property and did not exceed \$50.

In this State, a road traffic accident is defined as an accident which occurs due to the presence of a vehicle on a road (or other public thoroughfare, e.g. public car park, beach) and which involves property damage exceeding \$50 or casualty; a casualty occurring if the accident resulted in:

- (1) the death of any person within a period of thirty days of the accident,  
or
- (2) bodily injury to any person to an extent requiring surgical or medical treatment.

With the introduction of a more comprehensive accident report form on 1 October 1967, statistics have become available as a result of a joint effort by the

S.A. Police Department, the Road Traffic Board of South Australia and the Bureau of Census and Statistics. Before this date, the S.A. Police Department was the sole authority preparing statistics of road traffic accidents.

Statistics of injuries, accidents involving casualties and total accidents compiled since the introduction of the revised reporting form are not strictly comparable with earlier figures. Therefore, the decrease between 1966-67 and 1967-68 of total accidents, casualty accidents and injuries shown in the following tables should not necessarily be interpreted as actual decreases.

The next table shows summary details of road traffic accidents for the years 1963-64 to 1967-68.

### Road Traffic Accidents, South Australia

Year	Total Accidents Recorded	Accidents Involving Casualties	Persons Killed	Persons Injured	Rate per 100,000 Motor Vehicles on Register (a)			Rate per 100,000 of Mean Population		
					Total Accidents Recorded	Persons Killed	Persons Injured	Total Accidents Recorded	Persons Killed	Persons Injured
1963-64	22,912	6,284	236	8,300	6,462	70	2,341	2,239	23	811
1964-65	27,038	7,563	232	9,777	7,194	62	2,601	2,570	22	929
1965-66	26,151	6,758	266	8,980	6,656	68	2,286	2,417	25	830
1966-67	26,544	7,708	273	10,471	6,516	67	2,570	2,404	25	948
1967-68	24,530	6,297	257	8,595	5,832	61	2,044	2,194	23	769

(a) 'Motor vehicles on register' is the mean number for each year; includes Commonwealth owned vehicles except defence services vehicles; excludes road tractors and trailers.

— Indicates break in continuity of series; see text above.

In the following table, the types of road users killed and injured are shown according to age groups for 1967-68. The age group 17 years and less than 30 years accounted for 36 per cent of deaths and 37 per cent of injuries, while 36 per cent of persons killed and 40 per cent of persons injured were drivers of motor vehicles. In fact, in each of the last five years, more motor vehicle drivers were killed or injured than any other type of road user.

### Road Traffic Accidents: Age Groups of Casualties, South Australia 1967-68

Age Group of Casualty	Drivers of Motor Vehicles	Motor Cyclists	Pedal Cyclists	Passengers	Pedestrians	Other and Not Stated	Total
PERSONS KILLED							
Under 5 .....	—	—	—	6	3	—	9
5 — 16 .....	1	—	12	6	6	—	25
17 — 20 .....	12	3	1	24	3	—	43
21 — 29 .....	32	4	—	11	3	—	50
30 — 39 .....	7	2	—	5	6	—	20
40 — 49 .....	18	—	1	4	4	—	27
50 — 59 .....	12	2	3	10	5	1	33
60 and over .....	12	—	2	6	23	—	44
Not stated .....	—	1	—	5	1	—	6
Total .....	94	12	19	77	54	1	257
PERSONS INJURED							
Under 5 .....	—	—	—	191	83	—	275
5 — 16 .....	87	89	322	561	227	1	1,287
17 — 20 .....	771	283	41	564	62	4	1,725
21 — 29 .....	918	101	32	339	51	1	1,442
30 — 39 .....	533	38	30	188	51	—	840
40 — 49 .....	456	44	42	178	59	—	779
50 — 59 .....	295	29	40	144	65	—	573
60 and over .....	187	10	35	149	103	1	485
Not stated .....	232	35	29	824	66	3	1,189
Total .....	3,479	629	572	3,138	767	10	8,595

The following table shows casualties by type of road user for each of the last five years.

### Road Traffic Accidents: Casualties, South Australia

Year	Drivers of Motor Vehicles	Motor Cyclists	Pedal Cyclists	Pass- engers	Pedes- trians	Other and Not Stated	Total
PERSONS KILLED							
1963-64 ..	81	19	15	63	58	—	236
1964-65 ..	73	9	17	62	70	1	232
1965-66 ..	94	7	19	79	67	—	266
1966-67 ..	103	4	11	94	62	—	274
1967-68 ..	94	12	19	77	54	1	257
PERSONS INJURED							
1963-64 ..	3,204	686	655	3,106	642	7	8,300
1964-65 ..	3,683	813	729	3,559	987	6	9,777
1965-66 ..	3,617	639	640	3,158	926	—	8,980
1966-67 ..	4,162	674	774	3,927	930	4	10,471
1967-68 ..	3,479	629	572	3,138	767	10	8,595

— Indicates break in continuity of series; see text above.

Details of road traffic accidents for 1967-68 according to time of occurrence are shown in the next table. Of the total accidents reported, 21 per cent occurred between 4 p.m. and 6 p.m. and 13 per cent between 6 p.m. and 8 p.m. The latter period however accounted for 22 per cent of deaths. Altogether, the eight hour period from 4 p.m. to midnight accounted for 49 per cent of total accidents, 50 per cent of casualty accidents, 59 per cent of deaths and 51 per cent of injuries.

### Road Traffic Accidents: Time of Occurrence, South Australia

1967-68

Time of Occurrence	Total Accidents Reported	Accidents Involving Casualties	Persons Killed	Persons Injured
After midnight and up to 2 a.m. ....	1,127	370	17	544
After 2 a.m. and up to 4 a.m. ....	299	112	6	153
After 4 a.m. and up to 6 a.m. ....	204	78	2	116
After 6 a.m. and up to 8 a.m. ....	1,440	346	11	438
After 8 a.m. and up to 10 a.m. ....	2,276	510	10	617
After 10 a.m. and up to 12 noon ..	2,325	489	12	671
After 12 noon and up to 2 p.m. ....	2,155	499	20	635
After 2 p.m. and up to 4 p.m. ....	2,711	685	28	953
After 4 p.m. and up to 6 p.m. ....	5,131	1,229	31	1,576
After 6 p.m. and up to 8 p.m. ....	3,277	916	57	1,301
After 8 p.m. and up to 10 p.m. ....	1,773	512	24	737
After 10 p.m. and up to midnight ..	1,742	521	39	806
Not stated .....	70	30	—	48
Total .....	24,530	6,297	257	8,595

In the following table, accidents in 1967-68 are shown according to the nature of accident. Collisions between vehicles accounted for 71 per cent of all accidents and 47 per cent of deaths, while vehicles overturning or leaving the road and vehicles colliding with pedestrians accounted for 7 per cent and 3 per cent of all accidents respectively, and 18 per cent and 21 per cent of deaths.

#### Road Traffic Accidents: Nature, South Australia, 1967-68

Nature of Accidents	Total Accidents Reported	Accidents Involving Casualties	Persons Killed	Persons Injured
Collisions between vehicles (a) ....	17,322	3,512	120	5,038
Vehicles:				
Overturning or leaving road ..	1,631	770	47	1,102
Colliding with;				
Fixed objects (incl. parked vehicle) .....	4,404	1,142	36	1,552
Pedestrians .....	770	760	54	772
Animals and other objects.	264	28	—	32
Passenger accidents .....	42	42	—	47
Other types of accidents (b) .....	97	43	—	52
<b>Total .....</b>	<b>24,530</b>	<b>6,297</b>	<b>257</b>	<b>8,595</b>

(a) 'Vehicles' includes motor vehicles, motor cycles, pedal cycles, trains, trams, etc.

(b) Includes collisions between any vehicle and a train at a level crossing.

## SHIPPING

### Control of Shipping

The Commonwealth Parliament is empowered under the Commonwealth Constitution to make laws in respect of trade and commerce with other countries and among the States.

Navigation and shipping are regulated under the Commonwealth *Navigation Act* 1912-1968 and the provisions of the Act apply to ships registered in Australia (except those engaged solely in the domestic trade of any one State) and other British ships whose first port of clearance and whose port of destination are within the Commonwealth. Other shipping Acts under the trade and commerce power of the Commonwealth are the *Sea-Carriage of Goods Act* 1924-1961, the *Seamen's Compensation Act* 1911-1968, the *Seamen's War Pensions and Allowances Act* 1940-1968, the *Australian Coastal Shipping Commission Act* 1966-1968, the *Australian Coastal Shipping Agreement Act* 1956, and the *Stevedoring Industry Act* 1956-1966.

Shipping in South Australia was controlled by the Marine Board and Navigation Act of 1881 and subsequent amendments, and the Harbors Act, 1913. The first provisions of the Commonwealth *Navigation Act* 1912 were brought into operation in 1921. At present, shipping in South Australia is controlled by the Commonwealth Act and, where this does not apply, by the Harbors Act, 1936-1968 and the Marine Act, 1936-1968. Both of these State Acts are administered by the Department of Marine and Harbors.

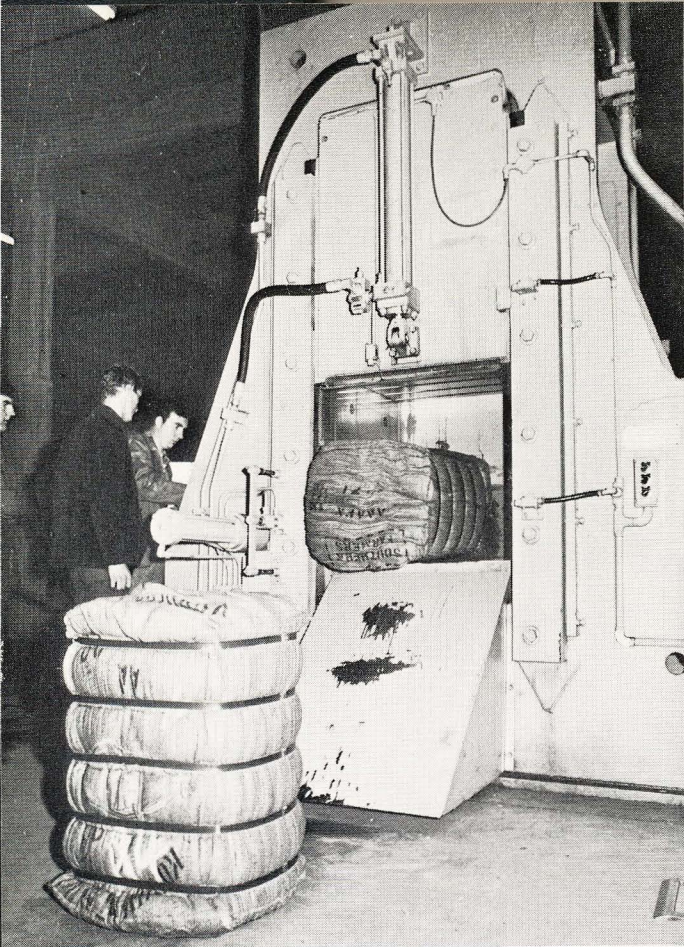




*Marcus B. Brownrigg*

The oil refinery at Port Stanvac which processes 45,000 barrels of crude oil each day.



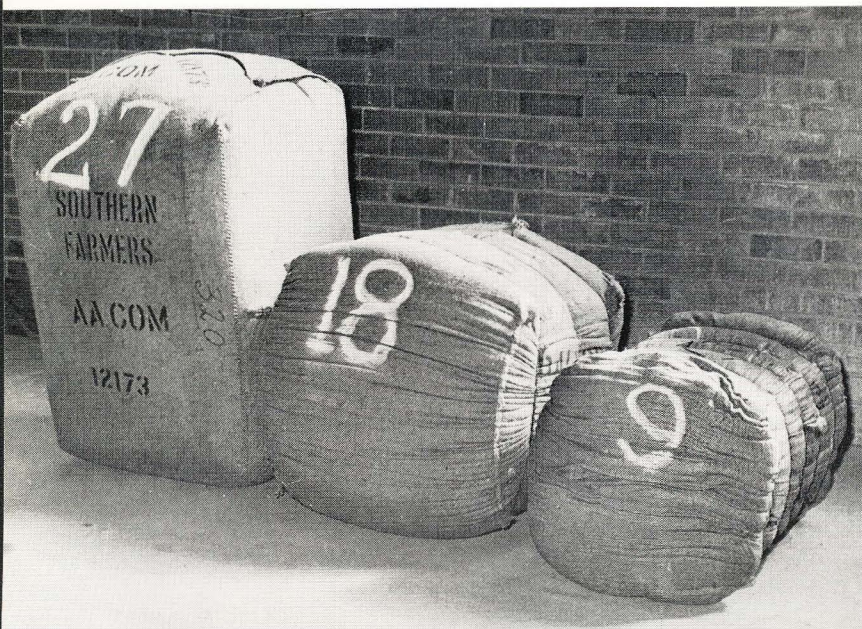


The adoption of containers and unit loads by overseas shipping companies has led to the high-density dumping of wool. A compressed bale is ejected from a high-density dump press at Port Adelaide.

Stock Journal

A comparison of wool bale sizes: left a normal bale of 27 cubic ft, centre a conventionally dumped bale of 18 cubic ft and right a high-density dumped bale of 9 cubic ft.

Stock Journal



### Registration of Ships

Registration of ships in Australia is in accordance with the Merchant Shipping Act 1894 of the Imperial Parliament, under sections which apply to the United Kingdom and all British dominions. Registration is not compulsory for vessels of less than 15 net tons which are engaged in river or coastal trade or for larger vessels if not engaged in trade. Yachts and small trading vessels may be registered at the request of the owners as registration facilitates the sale or mortgage of these vessels. An annual review of the register is carried out but some vessels, whose present ownership or use cannot be traced, are retained on the register in the absence of any positive justification for their removal.

The size of a vessel may be expressed in four different ways; by gross, net, displacement, or deadweight tonnage. Gross tonnage is the total enclosed cubic capacity of the ship on a basis of 100 cubic feet per ton; net tonnage is the cubic capacity available for cargo in terms of 100 cubic feet per ton; displacement tonnage is the weight of water displaced by a ship; deadweight tonnage is the total weight in tons of fuel, water, stores and cargo that a ship can carry. Passenger ships are commonly rated by their gross tonnage, cargo ships by their net tonnage, warships by their displacement tonnage, and oil tankers by their deadweight tonnage.

The following table shows the number of vessels on the South Australian Register at 31 December 1968.

### Shipping: Vessels on South Australian Register

*At 31 December 1968*

Net Tonnage	Steam and Motor			Sailing (including Fitted with Auxiliary Power)			Barges, Hulks, Dredges, etc., not Self-Propelled		
	Vessels	Gross Tonnage	Net Tonnage	Vessels	Gross Tonnage	Net Tonnage	Vessels	Gross Tonnage	Net Tonnage
Under 50 .....	35	2,732	470	64	1,436	1,081	—	—	—
50-99 .....	14	1,585	967	8	966	701	1	101	93
100-199 .....	3	1,007	497	1	229	132	1	179	179
200-499 .....	1	730	469	—	—	—	—	—	—
500-999 .....	2	4,237	1,543	—	—	—	1	674	624
1,000-2,999 .....	2	6,515	3,137	—	—	—	—	—	—
3,000 and over ...	3	21,961	13,253	—	—	—	—	—	—
<b>Total ...</b>	<b>60</b>	<b>38,767</b>	<b>20,336</b>	<b>73</b>	<b>2,631</b>	<b>1,914</b>	<b>3</b>	<b>954</b>	<b>896</b>

### Arrivals at South Australian Ports

Shipping arrivals at all ports in South Australia, including vessels moving only between ports in this State, for the years 1958-59 to 1967-68 are shown in the following table. Figures to and including 1966-67 are as advised by the South Australian Department of Marine and Harbors for all trading vessels; figures for 1967-68 are for trading vessels exceeding 200 net tons, based on returns rendered to Collectors of Customs by shipping companies or their agents. A further table shows entry of trading vessels exceeding 200 net tons at individual customs ports during 1967-68. In both tables the column headings (intrastate, interstate, and

overseas) indicate the division of trade on which the vessels were engaged at the relevant time and do not constitute a classification of the vessels themselves.

### Shipping: Vessels Entered at South Australian Ports

Year	Intrastate		Interstate		Overseas		Total	
	Number	Net Tonnage	Number	Net Tonnage	Number	Net Tonnage	Number	Net Tonnage
		'000		'000		'000		'000
1958-59 .....	4,122	943	1,153	3,077	1,147	5,284	6,422	9,304
1959-60 .....	3,788	989	1,123	3,055	1,143	5,233	6,054	9,277
1960-61 .....	3,803	695	1,119	3,075	1,343	6,140	6,265	9,910
1961-62 .....	3,228	775	1,098	3,039	1,464	6,609	5,790	10,423
1962-63 .....	2,949	899	1,096	3,184	1,421	6,638	5,466	10,721
1963-64 .....	2,920	1,227	1,206	3,574	1,629	8,326	5,755	13,127
1964-65 .....	3,020	1,301	1,160	3,565	1,555	8,259	5,735	13,124
1965-66 .....	2,717	1,065	1,172	3,700	1,387	7,563	5,276	12,328
1966-67 .....	1,964	1,000	1,043	3,643	1,435	8,108	4,442	12,751
1967-68 .....	1,096	2,113	1,140	4,938	760	5,091	2,996	12,141

— Indicates break in continuity of series; see text above.

In 1958-59 intrastate shipping accounted for 64 per cent of all arrivals whereas in 1966-67 this figure had fallen to 44 per cent. Although there was a fall in the total number of arrivals over the period, total net tonnage increased—the average size of ships arriving increased from 1,448 net tons in 1958-59 to 2,871 net tons in 1966-67.

### Shipping: Vessels Entered at Customs Ports, South Australia, 1967-68

Port	Intrastate		Interstate		Overseas		Total	
	Number	Net Tonnage	Number	Net Tonnage	Number	Net Tonnage	Number	Net Tonnage
		'000		'000		'000		'000
Ardrossan .....	50	111	34	93	—	—	84	204
Ballast Head .....	21	30	9	18	—	—	30	48
Edithburgh .....	8	16	1	1	—	—	9	18
Port Adelaide (a) ..	342	486	488	1,884	604	2,862	1,434	5,233
Port Augusta .....	—	—	11	24	6	26	17	50
Port Lincoln .....	159	286	63	212	30	151	252	648
Port Pirie .....	82	349	119	440	11	53	212	842
Port Stanvac .....	30	176	32	201	52	1,705	114	2,083
Rapid Bay .....	21	71	24	99	—	—	45	171
Stenhouse Bay .....	32	45	32	46	1	1	65	93
Thevenard .....	22	66	19	46	26	114	67	226
Wallaroo .....	3	14	10	56	14	60	27	130
Whyalla .....	73	271	297	1,816	16	119	386	2,206

(a) Inner and outer harbour.

The next table shows arrivals of vessels exceeding 200 net tons at selected customs ports only, according to country of registration of the vessels.



**Shipping: Country of Registration, Vessels Entered at Selected Customs Ports,  
South Australia**

Customs Port	Country of Registration	Vessels		Net Tonnage	
		1966-67	1967-68	1966-67	1967-68
Port Adelaide ..	Australia .....	314	596	831,264	1,053,485
	Denmark .....	37	22	101,038	73,468
	Germany, Federal Republic ..	41	30	158,817	131,322
	Italy .....	39	46	423,388	457,439
	Japan .....	79	62	348,584	286,884
	Netherlands .....	73	69	288,904	276,074
	New Zealand .....	43	41	79,767	79,131
	Norway .....	62	63	284,226	313,608
	Sweden .....	72	74	269,956	286,392
	United Kingdom .....	314	275	1,715,013	1,507,969
	Other countries .....	157	156	685,157	766,812
	Total .....	1,231	1,434	5,186,114	5,232,584
Ardrossan .....	Australia .....	80	80	174,872	183,363
	Other countries .....	22	4	120,830	20,575
	Total .....	102	84	295,702	203,938
Port Lincoln ..	Australia .....	54	189	217,404	336,212
	Greece .....	13	9	72,647	48,280
	Norway .....	17	9	104,737	53,984
	United Kingdom .....	24	26	112,875	124,650
	Other countries .....	28	19	153,326	85,290
	Total .....	136	252	660,989	648,416
Port Pirie .....	Australia .....	84	83	281,813	271,773
	Japan .....	12	14	54,964	61,487
	Netherlands .....	12	9	54,019	33,135
	Norway .....	12	5	81,408	34,321
	United Kingdom .....	50	54	216,143	254,782
	Other countries .....	52	47	202,197	186,426
	Total .....	222	212	890,544	841,924
Port Stanvac ..	Australia .....	60	57	369,749	347,711
	Liberia .....	13	22	395,016	762,165
	United Kingdom .....	22	20	792,027	676,010
	Other countries .....	30	15	569,065	296,758
	Total .....	125	114	2,125,857	2,082,644
Whyalla .....	Australia .....	292	322	1,306,758	1,687,745
	United Kingdom .....	38	24	471,347	311,881
	Other countries .....	38	40	191,329	206,505
	Total .....	368	386	1,969,434	2,206,131

### Overseas Shipping Cargo

Overseas shipping cargo statistics are compiled from returns submitted by shipping companies or their representatives to Customs Houses at each port in South Australia. A return is required for each movement of a vessel into and out of a port except for (i) naval vessels, (ii) yachts and other craft used for pleasure, (iii) foreign fishing vessels that neither load nor discharge cargo and (iv) vessels not exceeding 200 net tons.

Cargo is recorded on returns in terms of either units of weight or units of measurement (a ton measurement is a unit of 40 cubic feet) depending on the basis on which freight is charged. The statistics show separate figures for cargo recorded in tons weight and cargo recorded in tons measurement. The aggregates for weight and measure cargo are not added to a figure for total cargo because they are unlike quantities; and comparisons of total cargo between ports, trade routes or periods of time could be affected by variations in the cargo mix and in the basis on which freight is charged.

The following figures show, for the years 1966-67 and 1967-68, particulars of cargo loaded in South Australia for discharge overseas, and of cargo discharged in South Australia from overseas, classified according to major trade areas.

**Shipping: Cargo Loaded in South Australia, Port of Destination**

Cargo Loaded for Ports in—	1966-67		1967-68	
	Tons Weight	Tons Measure	Tons Weight	Tons Measure
North America and Hawaiian Islands:				
Northern Area;				
U.S.A. ....	73,005	3,131	80,480	1,905
Canada .....	4,282	9,174	5,698	9,440
Central America .....	1,029	90	2,022	48
Bermuda and Caribbean Area ...	714	2,715	754	3,126
South America .....	4,213	1,400	3,992	3,060
Europe (excluding U.S.S.R.):				
Northwestern, Central and Baltic;				
United Kingdom .....	325,613	45,180	292,956	32,840
Other .....	189,917	43,731	130,973	27,953
Southern Area .....	192,249	28,793	59,903	27,421
U.S.S.R. (in Europe and Asia) ....	1,125	—	1,462	—
Africa .....	174,105	15,412	85,099	15,730
Asia (excluding U.S.S.R.) .....	1,540,989	58,983	1,243,202	40,861
Papua and New Guinea, New Zealand and Pacific Islands .....	209,310	45,479	173,961	38,479
Indian Ocean Islands and Antarctic	85	2	135	9
Total cargo loaded ..	2,716,636	254,090	2,080,637	200,872

**Shipping: Cargo Discharged in South Australia, Port of Origin**

Cargo Discharged from Ports in—	1966-67		1967-68	
	Tons Weight	Tons Measure	Tons Weight	Tons Measure
North America and Hawaiian Islands:				
Northern Area;				
U.S.A. ....	130,092	69,540	123,107	43,886
Canada .....	20,591	62,786	28,252	66,364
Central America .....	14,630	1	8,455	14
Bermuda and Caribbean Area ...	161	18	1,250	44
South America .....	522	—	1,715	—
Europe (excluding U.S.S.R.):				
Northwestern, Central and Baltic;				
United Kingdom .....	29,360	61,655	25,338	48,966
Other .....	30,559	28,245	33,242	24,145
Southern Area .....	5,065	6,939	5,935	8,844
U.S.S.R. (in Europe and Asia) ....	—	—	—	—
Africa .....	4,677	6,678	3,499	6,190
Asia (excluding U.S.S.R.) .....	2,168,760	82,594	2,119,792	93,845
Papua and New Guinea, New Zealand and Pacific Islands .....	248,497	4,978	286,887	6,086
Indian Ocean Islands and Antarctic	101,152	—	124,044	—
Total cargo discharged ....	2,754,066	323,434	2,761,516	298,384

### Distances to Overseas Ports

Distances in nautical miles from Port Adelaide to principal overseas ports are shown in the following table. Particulars of distances by sea from Port Adelaide to the ports of other Australian capital cities are given on page 492.

#### Distances from Port Adelaide to Principal Overseas Ports

Port Adelaide to:	Nautical Miles	Port Adelaide to:	Nautical Miles
<i>Africa;</i>		<i>New Zealand;</i>	
Capetown .....	6,107	Auckland .....	2,035
Port Said .....	7,500	Wellington .....	1,880
<i>Asia and East Indies;</i>		<i>North America;</i>	
Colombo .....	4,364	Baltimore .....	10,253
Djakarta .....	3,047	Montreal .....	11,468
Hong Kong .....	4,789	New York .....	10,323
Singapore .....	3,504	Panama .....	8,307
Yokohama .....	5,352	San Francisco .....	7,357
<i>Europe (a);</i>		Vancouver .....	7,741
Liverpool .....	10,677	<i>South America;</i>	
London .....	10,712	Buenos Aires .....	7,775
Marseilles .....	9,011	Rio de Janeiro .....	8,579
Naples .....	8,607	Valparaiso .....	6,780

(a) *Via Suez Canal.* Distances *via Cape Town* are: London, 12,049 miles; Liverpool, 12,010 miles; Marseilles, 11 750 miles; and Naples, 12,039 miles.

## CIVIL AVIATION

### Control of Civil Aviation

In Australia, civil aviation is subject to the Commonwealth *Air Navigation Act* 1920-1966 and to regulations made under the Act. The South Australian Air Navigation Act, 1937 provided for 'the application of Commonwealth Air Navigation Regulations to, and in relation to, air navigation within the State of South Australia'. The regulations under the Commonwealth Act were drawn up to give effect to the 1944 Chicago convention on Civil Aviation. Regulations based on the resolutions of the Paris convention in 1919 were no longer adequate in the years after the 1939-45 War because of the immense wartime development of aerial transport. The present regulations, administered by the Commonwealth Department of Civil Aviation, cover the registration of aircraft and the issue of certificates of airworthiness; the licensing of aircraft services, aircraft operating crews, aerodromes, and flying training schools; and the rules of the air. The department is responsible for the operation of Air Traffic Control and has assumed responsibility for co-ordination of Search and Rescue operations.

Under the *Australian National Airlines Act* 1945 the Australian National Airlines Commission was established and empowered to operate Commonwealth-owned air services. The Commission trades under the name Trans-Australia Airlines.

The *Civil Aviation Agreement Act* 1952 ratified an agreement between the Commonwealth and Australian National Airways Pty Ltd to ensure the efficient and economical operation of air services within Australia by eliminating

wasteful competition between that company and Trans-Australia Airlines and to rationalise the services of both airlines. The *Civil Aviation Agreement Act* 1957 was enacted to extend the privileges and obligations of the 1952 Act to the new proprietor of the major private airline after the purchase of Australian National Airways Pty Ltd by Ansett Transport Industries Ltd. The Commonwealth passed the *Airlines Equipment Act* in 1958 and this provided for further financial assistance to both airlines for the purchase of new aircraft and empowered the Commonwealth to limit the aircraft capacity being provided on competitive routes by these two operators.

The Airlines Agreement approved by the *Airlines Agreement Act* 1961 consolidated all the arrangements and principles developed by the Government over the past decade for maintaining and securing the competitive airline system and made important arrangements affecting the introduction of new aircraft on Australian domestic routes. The *Civil Aviation Agreement Act* 1952-1957, amended by the 1961 Act, is now cited as the *Airlines Agreement Act* 1952-1961.

For reference to international agreements on civil aviation see the *Official Year Book of the Commonwealth of Australia* No. 48, and for references to international organisations see *Year Book* No. 37.

### Aircraft on Register

The total number of aircraft listed on the Australian register at 30 June 1968 was 3,356, an increase from 2,970 registered at June 1967. Corresponding figures for the South Australian-Northern Territory Region are given in the following table which shows aircraft classified according to operations.

**Aircraft Registered, Type of Operation**  
**South Australia-Northern Territory Region**

Type of Operation	At 30 June				
	1964	1965	1966	1967	1968
Private.....	104	108	116	124	142
Aerial work (a) .....	43	51	67	72	120
Charter .....	39	48	72	86	159
Regular public transport .....	19	15	15	20	15
Total .....	205	222	270	302	436

(a) Includes agricultural work, ambulance, survey and pilot training functions.

### Aerial Medical Services

Aerial medical services are carried out in the outback areas of Australia. The Royal Flying Doctor Service of Australia (S.A. Section) Inc. operates control stations at Alice Springs and Port Augusta. Early in 1968 the Flying Doctor Service took over the aerial services of the Bush Church Aid Society (S.A. Branch). These services, previously operated from Ceduna, are now maintained from Port Augusta.

### Australian Flying Scholarship Scheme

The Commonwealth has subsidised flying training in Australia largely through the aero clubs since 1926. In 1961 the Commonwealth introduced a new system of subsidies to Australian flying training organisations including the aero clubs, flying schools and the Gliding Federation of Australia, spread over a four-year period. These subsidies are no longer in operation but the Australian Flying Scholarship scheme which was introduced (at the same time as the subsidy arrangements) for the training of career pilots for the Australian commercial aviation industry is still in operation.

### Passengers and Freight Carried

The number of passengers carried on civil airlines in South Australia has more than doubled on both interstate and intrastate services during the last ten years while tonnage of freight remained relatively stable. Details of movements at principal airports for the last five years are shown in the following table. A full list of Government and licensed aerodromes in South Australia appears on page 332.

**Principal Airports, South Australia**  
**Passengers, Freight and Aircraft Movements**

Airport	1963-64	1964-65	1965-66	1966-67	1967-68
<b>PASSENGERS (a)</b>					
Adelaide (b) (c) .....	539,319	628,629	747,165	779,020	863,652
Kingscote .....	32,821	40,591	42,197	44,764	44,316
Port Lincoln .....	33,859	38,858	41,024	42,643	40,423
Woomera .....	40,247	36,072	32,609	33,028	32,459
Whyalla .....	16,918	22,901	24,692	27,710	32,295
Mount Gambier .....	15,821	16,731	20,016	19,085	19,315
<b>FREIGHT—SHORT TONS (d)</b>					
Adelaide (b) (c) .....	7,241	8,322	11,887	12,134	14,476
Kingscote .....	239	226	204	220	188
Port Lincoln .....	419	439	426	366	180
Woomera .....	516	446	408	385	374
Whyalla .....	231	198	209	211	209
Mount Gambier .....	101	106	111	106	97
<b>AIRCRAFT MOVEMENTS (e)</b>					
Adelaide (c) .....	18,770	18,706	20,470	19,815	19,478
Kingscote .....	1,240	1,335	1,512	1,533	1,396
Port Lincoln .....	1,638	1,480	1,969	1,791	1,592
Woomera .....	1,428	1,130	1,065	1,122	1,103
Whyalla .....	878	982	1,298	1,162	1,184
Mount Gambier .....	1,158	1,170	1,256	1,248	1,244

(a) Total of embarkations and disembarkations.

(b) Figures of passengers and freight movements are overstated to the extent of through traffic transferring between flights.

(c) Includes Salisbury.

(d) Total of freight loaded and unloaded.

(e) Total of arrivals and departures.

## 11.2 COMMUNICATION

### CONTROL OF POSTS, TELEGRAPHS AND TELEPHONES

The postal, telegraphic and telephonic services in Australia are under the control of the Postmaster-General pursuant to the provisions of the *Post and Telegraph Act* 1901-1966. The Director-General of Posts and Telegraphs controls the Commonwealth Department under the Postmaster-General, whilst the principal officer in each State is the Director of Posts and Telegraphs.

The Postmaster-General's Department works in close co-operation with three important agencies: the Overseas Telecommunications Commission, which is responsible for establishing, maintaining, and operating public cable and radio telegraph services with overseas countries and ships at sea; the Australian Broadcasting Control Board, which ensures the provision of services by broadcasting stations and television stations in accordance with plans prepared by the Board; and the Australian Broadcasting Commission, which controls the activities of the National Broadcasting Service and the National Television Service.

As a result of Federation all the former colonial post and telegraph services were taken over by the Commonwealth on 1 March 1901.

### EARLY HISTORY

#### Posts

Postal facilities were first established in South Australia on 10 April 1837 when the mails were received at a temporary hut on the bank of the River Torrens, where they were sorted and delivered.

During the next few years, with the increase in mail and the need for larger accommodation, the site of the Post Office was changed several times. Finally, in 1851 the General Post Office was removed to its present site at the corner of King William and Franklin Streets into a new building which housed the Metropolitan Police Station, Court House, and Post Office. The present General Post Office with its Victoria clock tower was completed in 1872 at a cost of between \$80,000 and \$100,000. The earlier Post Office was demolished in 1891, and additions to the new General Post Office were completed in 1893 to provide accommodation for the Telegraph Office.

Post offices were established at Port Adelaide and Port Lincoln in 1839 and fortnightly mails were introduced and carried by police between Adelaide, Morphett Vale, Willunga and Encounter Bay. House to house deliveries by letter carriers began in South Adelaide at this time.

A Post Office Act passed in 1839 fixed the rate of inland postage at 3d. (2c) per letter or packet whilst the charges for ship letters remained at one penny (cent). A change in the letter rate of postage on inland letters was made to 2d. (2c) per ½oz in 1854. Postage stamps, printed in England, were introduced in 1855 and pre-payment of postage became compulsory; penny (cent) postcards were issued in December 1876. The money order department was opened in 1859, postal notes were issued in 1887, and in 1889 the parcels post was established.

Steam postal communication was inaugurated in 1852, and in the following year a contract was entered into for the conveyance of mails between England and Australia *via* Singapore, calling at Albany (King George Sound), Adelaide, Melbourne, and Sydney. During 1859 a fresh contract was signed for the conveyance of a monthly mail *via* Mauritius, receiving and delivering the South Australian mails at Kangaroo Island. This route was abandoned in favour of a service from Ceylon direct to Albany and thence to Melbourne. In 1862 the Government of South Australia accepted the tender of the Australian Steam Navigation Company for a branch mail service to Albany.

### Telegraphs

The first Superintendent of Telegraphs and Observer was appointed in February 1855 and in December the first telegraph line in the colony was commenced from Adelaide to Port Adelaide. The line opened for business in February 1856.

A telegraph line between Adelaide and Melbourne was opened in 1858 and a second line was completed by the end of 1861; a direct line between Sydney and Adelaide was opened in 1867. In the meantime, the telegraph in South Australia had been extended to many new mining centres and other country areas.

On 22 August 1872 the 2,000 mile overland telegraph line from Port Augusta to Port Darwin was completed to form a link with the submarine cable from London which had already been extended from Java to Port Darwin. A line from Adelaide to Perth was opened in 1877.

### Telephones

The first departmental trials of telephone communication in South Australia were made before the invention of the microphone, and in January 1878, communication was effected between Semaphore, Adelaide, and Kapunda and later between Semaphore and Port Augusta. Another successful trial was made on the Adelaide-Darwin telegraph line between Beltana and Strangways Springs, a wire distance of 200 miles.

In May 1883 the Adelaide Telephone Exchange was opened with forty-eight subscribers and in September an exchange was opened at Port Adelaide. A telephone exchange building was erected adjoining the General Post Office in 1908.

A more detailed history of Posts, Telegraphs and Telephones was included on pages 469-70 of the *South Australian Year Book* 1967.

## DEVELOPMENT OF SERVICES

In 1901 there were 713 post offices operating in South Australia and Northern Territory, with 1,831 telephone services connected. At 30 June 1968 there were 911 post offices and 212,842 telephone services in operation. Revenue from postal services has increased from approximately \$280,000 in 1901 to \$11,351,000 in 1967-68. Telegraph and telephone revenue in 1901 was \$262,000 compared with \$2,688,000 telegraph revenue and \$30,124,000 revenue from telephone services in 1967-68.

Details of post offices in operation and the number of persons employed in postal services in South Australia for the years 1963-64 to 1967-68 are given in the following tables. All tables in this section include details for the Northern Territory as separate figures are not available.

**Post Offices: Number**  
**South Australia and Northern Territory**

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
Post Offices:					
Official .....	172	173	173	174	173
Non-official .....	753	752	751	747	738
Telephone Offices .....	110	108	105	103	95
Total .....	1,035	1,033	1,029	1,024	1,006

Non-official post offices are conducted by persons who are not members of the Commonwealth Public Service and who receive an allowance based on business transacted—in many instances this type of business is conducted in conjunction with some other business activity. Telephone offices provide facilities for making trunk line and local telephone calls and for lodging telegrams but do not transact any other postal services.

**Post Offices: Employment<sup>(a)</sup>**  
**South Australia and Northern Territory**

Persons Employed	1963-64	1964-65	1965-66	1966-67	1967-68
Direct Employees:					
Permanent Officers .....	6,649	6,650	7,026	7,335	7,861
Temporary and Exempt Employees .....	2,356	2,517	2,347	2,252	1,958
Total .....	9,005	9,167	9,373	9,587	9,819
Other:					
Non-official and Semi-official Postmasters .....	943	931	751	748	739
Persons exclusive of Postmasters employed at Non-official offices .....					
Telephone Office Keepers ...	108	108	104	99	94
Mail Contractors .....	355	363	339	336	330
Total .....	1,406	1,402	1,388	1,384	1,375
Total all employees.	10,411	10,569	10,761	10,971	11,194

(a) 'Direct Employees' are full-time staff directly under the control of the P.M.G.'s Department including temporary staff but excluding part-time staff (285 at 30 June 1968) while 'Other' employees include staff engaged, either full-time or part-time, under contract or in return for payment appropriate to work performed.

**Revenue and Expenditure**

The Post Office maintains a system of financial and management accounts, known as its commercial accounts, which are quite distinct from the cash accounts maintained to meet Treasury requirements. The latter accounts record cash receipts paid into the Commonwealth Public Account and the cash payments made from funds appropriated by the Commonwealth Parliament for Post Office purposes.



Cash receipts and payments of the Postmaster-General's Department in South Australia for the years 1963-64 to 1967-68 are given in the following tables. The figures exclude trust fund transactions *e.g.* pension payments, Commonwealth Savings Bank operations, etc. Cash expenditure on capital works for the last five years is shown in a separate table.

**Postmaster-General's Department: Cash Receipts**  
**South Australia and Northern Territory**

Year	Postal	Telegraph	Telephone	Other	Total Receipts
			\$'000		
1963-64 ..	8,664	1,852	19,180	46	29,742
1964-65 ..	9,285	2,187	23,038	27	34,536
1965-66 ..	9,670	2,398	24,757	89	36,914
1966-67 ..	9,939	2,521	26,990	179	39,629
1967-68 ..	11,351	2,688	30,124	27	44,190

**Postmaster-General's Department: Non-Capital Expenditure**  
**South Australia and Northern Territory**

Year	Salaries and Payments in Nature of Salary	Administrative Expenses	Stores and Material	Mail Services	Engineering Services	Rent, Repairs and Maintenance	Total Non-Capital Expenditure
				\$'000			
1963-64 .....	10,274	1,480	324	926	7,940	392	21,336
1964-65 .....	11,399	1,591	332	979	8,428	481	23,211
1965-66 .....	12,124	1,740	407	1,018	9,155	604	25,048
1966-67 .....	13,557	1,470	898	1,076	9,615	660	27,276
1967-68 .....	14,770	1,576	854	1,098	10,772	791	29,860

**Postmaster-General's Department: Capital Works Cash Expenditure**  
**South Australia and Northern Territory**

Year	Telephone Services	Telegraph Services	Other Plant and Equipment and Motor Vehicles	Buildings	Sites and Properties	Total
			\$'000			
1963-64 .....	11,138	176	1,166	1,203	45	13,728
1964-65 .....	13,834	210	1,181	1,111	149	16,485
1965-66 .....	14,252	270	1,248	1,004	85	16,859
1966-67 .....	15,151	235	1,350	1,430	27	18,192
1967-68 .....	16,519	353	1,709	1,974	488	21,044

**Postal Articles Handled**

Articles handled by the Postmaster-General's Department in South Australia and Northern Territory during the years 1963-64 to 1967-68 are shown in the following table.

**Postal Articles Handled**  
**South Australia and Northern Territory**

Year	Letters and Postcards (a)	Newspapers Packets (a)	Parcels (b)	Registered Articles	All Articles
'000					
<b>Posted for delivery:</b>					
<b>Within Australia;</b>					
1963-64 .....	156,379	16,463	1,310	756	174,908
1964-65 .....	165,279	16,901	1,327	696	184,203
1965-66 .....	177,760	17,067	1,337	782	196,947
1966-67 .....	169,756	18,245	1,404	788	190,193
1967-68 .....	168,072	17,739	1,533	766	188,110
<b>Beyond Australia;</b>					
1963-64 .....	6,410	900	41	54	7,405
1964-65 .....	7,247	1,184	46	59	8,536
1965-66 .....	7,979	1,507	51	62	9,599
1966-67 .....	8,270	1,302	62	62	9,696
1967-68 .....	8,603	1,587	64	62	10,316
<b>Received from beyond Australia;</b>					
1963-64 .....	4,479	5,111	80	28	9,698
1964-65 .....	5,571	5,467	88	30	11,156
1965-66 .....	6,332	5,321	100	31	11,785
1966-67 .....	5,912	4,873	114	32	10,931
1967-68 .....	5,671	4,530	114	31	10,346

(a) Includes Certified and Special Delivery mail.

(b) Includes registered parcels.

**Money Orders and Postal Orders**

The number of money orders issued in Australia in 1944-45 was approximately 3.5 million, whereas in 1967-68, 11.4 million were issued. On the other hand, the number of postal orders issued declined from 22.7 million in 1944-45 to approximately 12.4 million in 1967-68.

In South Australia the value of money orders and postal orders paid in 1944-45 amounted to \$2,995,000 and \$1,072,000 respectively; in 1967-68 the corresponding values were \$32,228,000 and \$2,260,000. Total commission charged on money orders issued in 1967-68 amounted to \$258,000. The fee on postal orders issued in 1967-68 amounted to \$96,000.

**Money Orders Issued and Paid**  
**South Australia and Northern Territory**

Year	Money Order Offices	For Payment Within Australia (a)				For Payment Beyond Australia			
		Number Issued (a)	Value (a)	Number Paid (a)	Value (a)	Number Issued	Value	Number Paid	Value
	Number	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000
1963-64	535	(a) 1,050	(a) 28,254	(a) 970	(a) 27,319	57	376	16	236
1964-65	543	(a) 1,040	(a) 31,910	(a) 1,036	(a) 30,944	61	413	19	293
1965-66	547	(a) 1,200	(a) 34,759	(a) 1,103	(a) 33,867	67	425	22	359
1966-67	549	(a) 1,219	(a) 37,314	(a) 1,145	(a) 36,531	74	462	23	414
1967-68	551	1,110	32,506	1,048	31,866	64	471	22	363

(a) Includes official money orders used in bringing to account telephone account collections and War Service Homes repayments. This practice was discontinued toward the end of 1967-68.

**Postal Orders<sup>(a)</sup> Issued and Paid**  
**South Australia and Northern Territory**

Year	Postal Order Offices	Postal Orders Issued		Postal Orders Paid	
		Number	Value	Number	Value
	Number	'000	\$'000	'000	\$'000
1963-64 .....	925	2,951	2,814	938	1,138
1964-65 .....	925	3,158	3,083	951	1,169
1965-66 .....	923	3,162	3,165	947	1,165
1966-67 .....	910	2,935	3,438	970	1,528
1967-68 .....	901	1,755	3,358	1,176	2,260

(a) Postal notes replaced by postal orders on 1 June 1966.

### Telegraph System

Australia's up-to-date telegraph service, known as TRESS (Teleprinter Repertory Switching System) was first introduced in South Australia in 1959, before being extended to the other States. This system, using teleprinters and automatic switching apparatus, has eliminated the intermediate handling of telegraph traffic, resulting in greater speed and economy.

Another telegraph service known as TELEX has been available to Post Office customers in South Australia since 1957. TELEX subscribers are provided with a teleprinter in their own premises and may be connected through the teleprinter exchange with other TELEX subscribers anywhere in Australia and in a number of overseas countries. Since 1957, when there were 18 subscribers in South Australia, the number had grown to 437 at 30 June 1968.

The number of telegrams dispatched and received, and some information on the operations of TELEX during the years 1961-62 to 1967-68 are shown below.

**Telegraph Services**  
**South Australia and Northern Territory**

Year	Telegrams			Teleprinter Exchange	
	Dispatched within Australia	Dispatched beyond Australia	Received from beyond Australia	Sub- scribers	Number of Calls (a)
	'000	'000	'000	Number	'000
1961-62 .....	1,714	77	69	100	62
1962-63 .....	1,783	80	72	122	98
1963-64 .....	1,863	85	79	161	144
1964-65 .....	2,009	99	83	215	196
1965-66 .....	2,129	106	86	243	254
1966-67 .....	2,091	110	94	328	502
1967-68 .....	2,117	117	(b)	437	847

(a) Includes official Post Office traffic.

(b) Statistics of incoming traffic are no longer available.

The Post Office picturegram service is used extensively by Adelaide newspapers to send and receive photographs to and from other parts of Australia and overseas for publication within a few hours of being taken. This service is also used by business and professional people to transmit photographs of documents, X-rays, and other matter capable of being photographed.

### Telephone Services

The Post Office has continued to provide additional subscriber services, more and better trunk line circuits, and has installed automatic telephone exchanges. Between 1945 and 1968 the number of trunk line channels in the State increased from 760 to 5,258 and the number of country automatic telephone exchanges from 20 to 305. There are 56 automatic exchanges in the Adelaide Telephone District.

Continued steady progress is being made toward the Post Office objective of nationwide subscriber to subscriber direct trunk dialling (S.T.D.). During 1968 the most significant development was the completion of the Adelaide Automatic Trunk Switching Exchange. At April 1969 S.T.D. facilities were available to approximately 86,000 subscribers in the Adelaide Telephone District and about 2,000 country subscribers for two-way contact with selected exchanges in New South Wales, Victoria, Queensland and Tasmania. In addition either one-way or two-way direct dialling was available between a number of other country exchanges and Adelaide.

Because approximately 70 per cent of trunk calls originate in country areas, directed either to the capital city or to other country exchanges, great benefit will accrue when all country exchanges are linked with the S.T.D. system. However many years will elapse before the majority of exchanges can be connected because of the amount of work and complex equipment involved.

### Telephone Services

#### South Australia and Northern Territory

At 30 June	Telephone Exchanges	Telephone Services						Trunk Line Channels in Service
		Ordinary Exchange	Duplex	Party Line	Private Branch Exchange	Public Telephones	Total	
1962.....	737	131,328	2,710	1,656	14,878	2,213	152,785	2,483
1963.....	740	139,484	2,366	1,600	16,231	2,331	162,012	2,752
1964.....	742	150,615	1,948	1,362	16,796	2,393	173,314	2,991
1965.....	743	158,973	1,624	1,310	17,615	2,527	182,249	3,403
1966.....	743	169,381	1,132	1,459	18,331	2,619	192,922	3,976
1967.....	738	179,271	694	1,452	19,091	2,683	203,191	4,502
1968.....	731	187,634	334	1,382	20,718	2,774	212,842	5,258

Metropolitan services are all operated through automatic exchanges, whereas at 30 June 1968, 45,901 country services were automatic and 29,593 services were manually connected. Metropolitan services totalled approximately 137,000 and of these 89,000 were residence services. In the country, business phone services accounted for the larger share (about 63 per cent) of services.

**Other Operations**

Details of radio and television stations licensed in South Australia are shown in the following table.

**Radio and Television Stations, South Australia<sup>(a)</sup>***At 30 June*

Radio Communication Stations	1964	1965	1966	1967	1968
<b>Broadcasting:</b>					
National .....	8	8	8	8	8
Commercial .....	8	8	8	8	8
<b>Television:</b>					
National .....	1	2	3	3	3
Commercial .....	2	2	4	4	5
<b>Transmitting and receiving:</b>					
Fixed;					
Aeronautical .....	5	5	5	5	5
Outpost .....	183	179	178	169	156
Other .....	97	57	72	67	81
Land;					
Aeronautical .....	8	8	10	15	21
Base stations for mobile services .....	427	474	543	618	693
Coast .....	14	16	21	22	21
Special experimental ...	44	51	56	53	61
Mobile .....	5,394	6,251	7,223	8,121	9,229
Amateur .....	615	649	678	702	734
<b>Total stations .....</b>	<b>6,806</b>	<b>7,710</b>	<b>8,809</b>	<b>9,795</b>	<b>11,025</b>

NOTE: A fixed station is established at a fixed location for the exchange of radio messages with other fixed stations whereas a land station is established at a fixed location for the exchange of radio messages with mobile stations. An outpost station is established in an outback area and communicates with control stations operated by such organisations as the Royal Flying Doctor service.

(a) Excludes stations in Northern Territory.

Under the Broadcasting and Television Act radio and television receivers must be licensed. A person who owns both a radio and a television receiver at the one address is issued with a combined receiving licence while a person owning only one type of receiver is issued with a radio listeners' licence or a television viewers' licence.

The number of radio listeners' licences, television viewers' licences and combined receiving licences in force at 30 June 1964 to 1968 and revenue from these licences during the years 1963-64 to 1967-68 are given in the following table.

**Broadcast Listeners' and Television Viewers' Licences  
South Australia and Northern Territory**

Item	Unit	1963-64	1964-65	1965-66	1966-67	1967-68
Listeners' Licences(a)	Number (b)	266,027	219,064	93,052	74,076	74,200
Viewers' Licences (a)	Number (b)	194,430	158,667	45,031	50,511	52,744
Combined Licences	Number (b)	—	49,976	188,695	203,993	215,851
Revenue (a) .....	\$'000	3,063	3,586	3,832	4,101	4,219

(a) Includes hirers' and short-term hirers' licences. (b) At 30 June.

Further information on radio and television services is contained in Part 6.4 Culture and Recreation.

### OVERSEAS TELECOMMUNICATIONS SERVICES

The Overseas Telecommunications Commission (Australia) is the authority responsible for the establishment, maintenance, operation and development of Australia's overseas public telegraph, phototelegraph and telex services by cable and by radio, and the provision, maintenance and development of cable and radio facilities for the conduct of Australia's overseas telephone services and of the facilities for services with ships at sea. Some of these services are provided in conjunction with the Postmaster-General's Department.

Recent developments have included the establishment of earth stations in Australia to operate in conjunction with a communications satellite system. Earth stations at Carnarvon in Western Australia and at Moree in New South Wales operate into communications satellite INTELSAT II which was launched in January 1967.

During August 1968 it was announced that contracts had been let by the Overseas Telecommunications Commission (Australia) for the construction of Australia's third earth station for satellite communications to be located near Ceduna. The station will face westward to INTELSAT III over the Indian Ocean and will carry all types of communications traffic to give Australia its first direct link by satellite to the United Kingdom, Europe, India, Ceylon and East Africa. Other links to Pakistan, Malaysia and some African countries will follow. It is expected that the station will be completed late in 1969.

Details of the overseas telecommunications services and traffic are published in various issues of the *Official Year Book of Commonwealth of Australia*, e.g. No. 54, 1968, pages 445-7.

## **PART 12**

# **PUBLIC FINANCE**

### **12.1 STRUCTURE OF PUBLIC FINANCE**

The collection of public revenue and the expenditure of public money in South Australia are the responsibility of four groups of authorities:

- (i) State Government and semi-government.
- (ii) Commonwealth Government.
- (iii) Semi-government.
- (iv) Local government.

The power to raise revenue from taxation is vested in the various governments and authorities by Acts of Parliament. Other revenue comes from the proceeds of the sale of goods and services to the public and to other governments and authorities. A major proportion of the revenue of the State Government, and a smaller proportion of the revenue of local government and some semi-government authorities is derived from grants from other levels of Government: grants are made by the Commonwealth to the State Government and by the latter to semi-government and local government bodies. A further source of funds is the loan market: Government securities are issued for loan raisings in Australia and overseas.

Authorisation for expenditure by Commonwealth and State Government departments is given by Appropriation Acts or by Special Acts of their respective Parliaments. Each State semi-government undertaking derives its authority for

expenditure from the provisions of the specific Act under which it has been established. The Local Government Act, 1934-1969 contains sections relating to local government expenditure.

The following sections of this part provide some details of the financial transactions of the government sector in South Australia. Special attention is given to transactions within the State Government budget, transactions of a number of semi-governmental authorities, and transactions of all local government authorities. In addition, details of some Commonwealth Government expenditures are included.

### **Commonwealth Government Transactions**

Reference is made to the revenue and expenditure of the Commonwealth Government only to the extent that it affects the finances of the State Government. As indicated in more detail below, not all of the transactions listed relate directly to the State budget; many of the items are negotiated wholly through State Trust Funds. The transactions which are included represent only a small proportion of total expenditure by the Commonwealth Government within South Australia. A more detailed analysis of Commonwealth Government finance may be obtained from the Year Book of the Commonwealth of Australia.

### **State Government Budget**

Statistics relating to the State Government budget are derived from accounts prepared by the Treasurer each year and included in the Report of the Auditor-General of South Australia. These accounts, which are on a cash basis, cover the Consolidated Revenue Account which in general terms is the current account of the Government, and the Loan Fund through which is handled the receipt and disbursement of all money raised by public borrowing.

State Government budget receipts include (in addition to loan raisings) taxation, proceeds of sale of goods and services by trading undertakings, some of the grants made by the Commonwealth Government, fees, rents, recoups and other sundry items. State Government disbursements are made for capital works, for provision of services (such as health, education and water supply), for general administrative expenses, and for interest and redemption payments.

The State Government budget excludes many transactions negotiated through State Government Deposit and Suspense Accounts (including working accounts) and Trust Funds. The volume of such transactions is considerable. For example, road works financed through Road Maintenance Act charges and by Commonwealth Aid Roads grants are handled through working accounts, as are the operating costs and revenue of the Woods and Forests Department.

Some idea of the framework of the various funds may be obtained from the following table showing sources and disposal of funds in which the balances of Trust Funds and of Deposit and Suspense Accounts appear as specific lines. However, figures for the total financial transactions of the State Government, that is the budget transactions plus transactions negotiated through working and trust accounts, are not available.



**Government of South Australia, Sources and Disposal of Funds at 30 June 1968**

Sources and Nature of Funds	\$'000	\$'000	\$'000
<b>Public Debt:</b>			
Securities Current at 1 July 1967 .....		1,013,060	
New Loans Raised during 1967-68 .....		179,386	
		<u>1,192,446</u>	
Less: Securities Redeemed and Converted .....		117,486	
Public Debt at 30 June 1968 .....			1,074,959
<b>Other Interest Bearing Indebtedness:</b>			
Trust Fund Balances .....			14,972
Liabilities to Commonwealth:			
Railway Standardisation and Equipment Agreements ..		10,902	
Housing Agreements .....		201,763	
Softwood Forestry Agreement .....		295	
Other .....			(a)
<b>Non-Interest Bearing Indebtedness:</b>			
Trust Fund Balances .....			2,616
<b>Departmental Balances and Other Funds:</b>			
Deposit and Suspense Accounts .....		18,645	
Less: Departmental Advances .....	284		
Payments in Suspense .....	84	368	18,277
			<u>1,323,786</u>
<b>Disposal of Funds</b>			
<b>Loan Account:</b>			
Total of Loan Works at 1 July 1967 .....		1,014,266	
Payments during 1967-68 (b) .....		79,058	
		<u>1,093,324</u>	
Less: Repayments .....	12,116		
Securities Cancelled .....	11,907	24,023	
Loan Works Account Balances at 30 June 1968 .....			1,069,301
<b>Consolidated Revenue Account:</b>			
Deficit at 1 July 1967 .....		5,505	
Receipts for Year .....	274,544		
Payments for Year .....	<u>277,404</u>		
Deficit for Year .....		2,860	
Deficit at 30 June 1968 .....			8,365
<b>Railway Standardisation and Equipment:</b>			
Improvements and Advances .....			10,902
<b>Housing Agreements:</b>			
Advances to S.A. Housing Trust .....		119,709	
Advances to Home Builders Fund .....		<u>82,055</u>	
			201,764
<b>Forestry Agreement:</b>			
Advances to Forestry Board .....			295
Cash at Bank .....			<u>33,159</u>
			<u>1,323,786</u>

(a) Less than \$500.

(b) Includes \$1,720,339 nominal increase in Loan Account.

**Semi-Governmental Accounts**

Most of the details included are based on the Auditor-General's annual reports prepared for a number of semi-governmental business undertakings, including those engaged in banking. Information is given from both revenue statements and balance sheets.

**Local Government Accounts**

Details included for Local Government Authorities are based on the cash statement of receipts and payments prepared each year by every council for the Local Government Department. Details of loan receipts and payments are included in these statements.

**12.2 COMMONWEALTH-STATE FINANCIAL RELATIONS**

Since Federation, the Commonwealth has made payments of various descriptions to the States. Prior to the 1939-45 War, Commonwealth payments were mainly of a marginal character and were confined, for the most part, to special grants to assist the financially weaker States and to certain specific purpose grants relating to such matters as Commonwealth assistance for roads and contributions under the Financial Agreement.

Since the 1939-45 War and the immediate post-war period there has been a marked increase in the amount and variety of Commonwealth assistance to the States. This has reflected, among other things, increases in the range and variety of governmental activities which have accompanied economic and social developments in this period of rapid growth of the Australian economy; greater participation by the Commonwealth in matters which were previously considered to be the sole responsibility of the States; and the effects of the introduction and continuation of uniform income tax and of other changes on the basic allocation of financial resources between the Commonwealth and the States.

There are various ways of classifying Commonwealth payments to the States. They may be classified as 'capital' as opposed to 'current' transactions; to general purpose grants compared with payments for purposes specified by the Commonwealth; or in accordance with the constitutional authority under which the payments are made. Many of the recently introduced grants have been for purposes specified by the Commonwealth, and instituted under Section 96 of the Constitution.

**THE COMMONWEALTH OF AUSTRALIA CONSTITUTION ACT**

Prior to Federation in 1901, each State exercised the right to raise its own revenue by various forms of taxation, customs and excise duties (including interstate customs), fees for services, licence fees, and other means.

Under the Commonwealth Constitution the Commonwealth Government assumed responsibility for certain activities; was vested with the power to levy income tax in addition to the States; and took over from the States the right to raise customs and excise duties, interstate customs being abolished.

The States were compensated for their loss of revenue by the provisions of section 87 (known as the Braddon Clause) of the Constitution, which reads:

'During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth shall be applied annually by the Commonwealth towards its expenditure.

The balance shall, in accordance with this Constitution be paid to the several States, or applied towards the payment of interest on debts of the several States taken over by the Commonwealth.'

The scheme of allocation among the States is laid down in sections 89 and 93.

Under the *Surplus Revenue Act* 1910, the Commonwealth was to retain the whole of the customs and excise revenue and make a fixed annual payment of \$2.50 per head of population to each State for a period of ten years. Although there were moves to have it changed, this method of payment continued until 1927.

Commonwealth subsidy paid to South Australia under Section 87 of the Constitution was \$1,685,016 for 1909-10; under the *Surplus Revenue Act* 1910, the subsidy was \$1,029,244 for 1910-11.

#### FINANCIAL AGREEMENT 1927

With the repeal of the *Surplus Revenue Act* 1910, the States were faced with the total loss of *per capita* payments, and this led to the financial agreement between the Commonwealth and the States on 12 December 1927. It was later affected by agreements made under the powers of section 105A of the Constitution which was amended in 1928. The main features of the financial agreement were:

- (i) The assumption by the Commonwealth of State obligations to bondholders in respect of existing State debts and agreement by the Commonwealth to contribute one third of sinking fund payments for liquidation of those debts.
- (ii) The payment by the Commonwealth to the States of an annual fixed amount of \$15,169,824 (an amount equal to the *per capita* payments for 1926-27) as a contribution toward interest on State debts.
- (iii) The provision of sinking funds to repay debts existing and subsequently incurred, the Commonwealth and States to contribute equally toward the latter.
- (iv) The establishment of an Australian Loan Council to control future loan raisings.

#### SPECIAL GRANTS

The Constitution provides, in section 96, for the granting of special financial assistance to the States. Prior to 1933, financial assistance of varying amounts was granted to South Australia, Western Australia, and Tasmania.

In 1933, the Commonwealth Government appointed the Commonwealth Grants Commission, of three members, to inquire into and report upon claims made by any State for a grant of financial assistance and any matters relevant thereto. From 1933 to 30 June 1959 applications were lodged by each of the

three States already mentioned. However, South Australia ceased to be a claimant State from 1 July 1959; and at the Premiers' Conference in June 1968, following a request from Western Australia, it was agreed that (subject to certain considerations) claims by Western Australia would cease after payments in respect of 1967-68. Thus from 1968-69 Tasmania will be the only claimant State.

#### FINANCIAL ASSISTANCE GRANTS

Financial assistance grants, formerly called tax reimbursements grants, make up the bulk of the assistance provided for general revenue purposes and are determined annually on the basis of an agreed formula. In 1942 uniform taxation of incomes throughout Australia was introduced by the Commonwealth Government to implement its financial policy for meeting the exigencies of war finance. The Commonwealth became the sole authority levying taxes upon incomes from 1 July 1942 to the end of the first full financial year after the cessation of the war. Each State received an annual payment from the Commonwealth, as reimbursement for loss of income tax revenue, under the *States Grants (Income Tax Reimbursement) Act* 1942. A similar arrangement was made under the *State Grants (Entertainments Tax Reimbursement) Act* 1942.

The Acts of 1942 were repealed in 1946 by the States Grants (Tax Reimbursement) Act which prescribed a fixed grant for each of the financial years 1946-47 and 1947-48 and, for subsequent years, an amount to be varied in accordance with changes in population and in average wages per person employed.

With the increasing financial needs of the States it became necessary for the Commonwealth to make grants in excess of those prescribed in the 1946 Act. Financial aid was extended by a States Grants (Special Financial Assistance) Act passed each year from 1951 to 1958 and by the States Grants (Additional Assistance) Act of 1958.

The *States Grants Act* 1959, repealed the States Grants (Tax Reimbursement) Act and provided for a new system of annual payments which were described as 'financial assistance' grants. The Act incorporated an arrangement designed to eliminate the need for supplementary grants by providing for adjustment of grants each year according to variations in population and increases (if any) in average wage per person employed; the latter included what became known as a 'betterment' factor. This legislation has been superseded by the *States Grants Act* 1965-1968 which retained the basic framework of the 1959 Act but increased the 'betterment' factor by making it 1.2 per cent of the total grant otherwise determined for each year: this Act also provided for an increase in the first year grant to Victoria, and a cumulative increase in the basic grant to Queensland.

The 1965 Act provided for consultation between the Commonwealth and the States concerning review of the legislation in relation to years subsequent to 1969-70 or earlier years in the event of substantial change in the financial relationships between the Commonwealth and a State or States.

#### OTHER FINANCIAL ASSISTANCE

In addition to the grants under the Financial Agreement, the special grants recommended by the Commonwealth Grants Commission, and the financial assistance grants, the Commonwealth makes payments to the States for specific purposes, some details of which are given below.

Grants for road works have been made since 1923, and from 1931 to 1958 were based on a percentage, varied from time to time, of Commonwealth petrol taxation. A new scheme of Commonwealth assistance to the States for roads was established by the *Commonwealth Aid Roads Act* 1959. The Commonwealth undertook to provide \$500,000,000 for distribution, according to stated criteria, to the States during the five years to 30 June 1964. The *Commonwealth Aids Roads Act* 1964 stipulated a sum of \$750,000,000 for distribution to the States during the five years from 1 July 1964. For the five years commencing 1 July 1969 the relevant sum will be \$1,252,000,000. The criteria for distribution to the States, and South Australia's share of these grants, are mentioned in references and text in Part 8.3 Roads.

Up to 30 June 1968 the Commonwealth had provided \$37,588,000 under the *Railway Standardization (South Australia) Agreement Act* 1949. The Commonwealth had also provided \$2,635,000 under the *Railway Equipment Agreement (South Australia) Act* 1961 for the purchase of locomotives and wagons for the carriage of ore from Broken Hill to Port Pirie. Over a period of fifty years the State must repay 30 per cent of the amount provided by the Commonwealth under these two agreements.

Under the *Tuberculosis Act* 1948, States are reimbursed by the Commonwealth for expenditure of a capital and maintenance nature on the provision of facilities for the diagnosis, treatment and control of tuberculosis.

The *States Grants (Mental Institutions) Act* 1955 provided for financial assistance to the States for capital expenditure on mental institutions to a maximum of \$20,000,000. This Act was replaced by the *States Grants (Mental Health Institutions) Act* 1964 under which the States are entitled to receive assistance amounting to one-third of the total expenditure incurred by them, with Commonwealth approval, in building and equipping mental health institutions. The *States Grants (Mental Health Institutions) Act* 1967 extended to 1970 the period for which this assistance would be provided.

Payments to the States for recurrent expenditure of universities commenced in 1951-52. Grants for capital works and equipment for universities were introduced in 1958. The *Universities (Financial Assistance) Act* 1966 provided for total payments of \$175,600,000 to the States during the period of three calendar years 1967 to 1969 towards recurrent and capital expenditure of universities. The *Universities (Financial Assistance) Act (No. 2)* 1967 increased this amount by \$6,900,000 and provided also for higher salaries for academic staff from 1 July 1967.

During 1964 and 1965 the Commonwealth introduced several types of grants designed to assist education and research in the States. These relate to science laboratories in State and private secondary schools, training of persons for employment in trade and technical occupations, education in non-university tertiary institutions (colleges of advanced education), and approved research projects. The range of institutions eligible for assistance through these grants was extended in 1967 to include teachers colleges, and in 1968 pre-school teachers colleges and secondary school libraries.

In 1964 the Commonwealth authorised payments to assist in the investigation and measurement of river and underground water resources.

From time to time the Commonwealth makes 'Natural Disaster' payments to various States: in 1968 grants to South Australia were authorised to reimburse expenditure on alleviation of the effects of drought and to compensate for loss of revenue resulting from drought.

For more complete historical and current information on Commonwealth financial assistance to the States reference should be made to the most recent issue of the bulletin *Commonwealth Payments to or for the States* presented to the Parliament of the Commonwealth of Australia. Figures in the following table are those which have been published in various issues of that bulletin and show the general pattern of Commonwealth payments to or for the State of South Australia since the Financial Agreement in 1927: some amounts shown are repayable to the Commonwealth (e.g. portion of railway project payments) but repayable advances for housing and war service land settlement are not included.

### Commonwealth Payments To or For the States, South Australia

Particulars	1929-30	1939-40	1949-50	1959-60	1967-68
	\$'000				
Financial Agreement :					
Interest on State Debt .....	1,408	1,408	1,408	1,408	1,408
Sinking Fund on State Debt .....	254	360	488	1,583	2,673
Special Grants .....	720	1,990	8,348	2,852	—
Financial Assistance Grants (tax reimbursements) .....	—	—	10,734	55,350	102,738
Additional Assistance .....	—	—	—	—	1,727
Commonwealth Aid Roads Act .....	522	1,006	2,039	9,846	18,384
Grants to universities .....	—	—	—	1,787	5,771
Science laboratories and technical training ....	—	—	—	—	2,873
Research Grants .....	—	—	—	—	560
Mental health institutions—contributions to capital expenditure .....	—	—	—	184	64
Tuberculosis Act, 1948—Capital .....	—	—	—	214	31
Current .....	—	—	34	1,247	620
Blood transfusion services .....	—	—	—	32	76
Road safety practices .....	—	—	14	23	15
Natural Disaster payments .....	—	—	—	70	1,000
Agricultural extension services .....	—	—	30	102	368
Water resources investigations .....	—	—	—	—	125
Eyre Highway .....	—	—	(a)	27	25
Railway projects .....	—	40	40	102	6,628
Colleges of advanced education .....	—	—	—	—	1,267
Softwood forestry .....	—	—	—	—	205
Minor agricultural research .....	—	—	—	—	—
Migrant centres .....	—	—	—	—	2
Morgan-Whyalla waterworks .....	—	—	50	—	—
Price control reimbursements .....	—	—	148	—	—
Coal Strike Emergency Grant .....	—	—	1,347	—	—
Assistance for deserted wives .....	—	—	—	—	25
Teachers colleges .....	—	—	—	—	502
Disposal of ships garbage .....	—	—	—	—	38
<b>Total .....</b>	<b>2,904</b>	<b>4,804</b>	<b>24,680</b>	<b>74,827</b>	<b>147,125</b>

(a) Payments from 1 July 1947 to 30 June 1959 were made from Commonwealth Aid Roads Trust Account and details are not available.

### NATIONAL WELFARE FUND

The States also receive, from the Commonwealth through the National Welfare Fund, payments in respect of hospital and pharmaceutical benefits, nutrition of children and reimbursement of maintenance expenditure on tuberculosis sanatoria. In South Australia the receipts are paid into the Consolidated Revenue Account

(or a suspense account in the case of the payment for free milk for school children). Receipts for the year 1967-68 were hospital benefits \$1,459,000, pharmaceutical benefits \$1,209,000, free milk for school children \$952,000, tuberculosis reimbursement of maintenance expenditure and surveys \$651,000.

The amounts stated above for hospital and pharmaceutical benefits relate to particular classes of patients and a limited range of drugs in government hospitals and are only a small portion of the total hospital and pharmaceutical benefits (see pages 242-5) which are paid from National Welfare Fund to or for residents of this State.

### 12.3 STATE GOVERNMENT FINANCE

As indicated earlier State Government accounting in South Australia is on a 'cash' basis. Receipts and payments fall into five main divisions, namely the Consolidated Revenue Account and Loan Fund (which together constitute the budget sector), Special Commonwealth Advances, Trust Fund Accounts and Deposit and Suspense Accounts.

#### CONSOLIDATED REVENUE ACCOUNT

This account is credited with receipts from State taxation, fees, licences, and charges for services, recoveries of interest and sinking fund, sales of Crown lands, and Commonwealth tax reimbursement and some other Commonwealth grants. The account is debited with the cost of revenue collection, legislative and administrative functions, interest and sinking fund on the public debt, provision of social services, operation of public undertakings and development of State resources. The resultant balance represents the State's surplus or deficit for the year. A table showing receipts and payments for the financial year 1967-68 and four earlier years is set out below.

#### Consolidated Revenue Account, South Australia

Particulars	1929-30	1939-40	1949-50	1959-60	1967-68
			\$'000		
Receipts .....	21,102	25,511	58,721	160,555	274,544
Payments .....	24,354	25,837	59,100	161,177	277,404
Surplus (+) or deficit (—) ..	—3,252	—325	—379	—622	—2,860

#### Per Head of Population

	\$	\$	\$	\$	\$
Receipts .....	36.37	42.72	85.50	171.99	245.52
Payments .....	41.97	43.28	86.05	172.65	248.07

## Sources of Revenue

The sources of revenue for the financial years 1963-64 to 1967-68 were as follows:

## Consolidated Revenue Account: Sources of Revenue, South Australia

<i>Total Revenue</i>					
Source of Revenue	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Taxation .....	29,825	34,901	36,852	42,270	45,226
Business undertakings .....	62,904	63,887	66,597	69,996	70,256
Territorial: Land sales, rents, etc. ....	2,009	2,193	2,067	2,120	2,074
Other :					
Interest and exchange....	17,280	18,148	19,167	19,868	20,906
Fees, fines, rents, etc. ..	19,327	23,489	24,258	28,816	30,209
Commonwealth grants (a)	79,660	79,563	87,875	95,753	105,872
Total .....	211,006	222,181	236,816	258,823	274,544
<i>Per Head of Population</i>					
	Dollars				
Taxation .....	29.14	33.17	34.06	38.29	40.44
Business undertakings .....	61.46	60.72	61.56	63.40	62.83
Territorial: Land sales, rents, etc. ....	1.96	2.08	1.91	1.92	1.85
Other :					
Interest and exchange....	16.88	17.25	17.72	18.00	18.70
Fees, fines, rents, etc. ..	18.88	22.33	22.42	26.10	27.02
Commonwealth grants (a)	77.84	75.62	81.23	86.74	94.68
Total .....	206.17	211.18	218.90	234.45	245.52
<i>Proportion of Total Revenue</i>					
	Per Cent				
Taxation .....	14.14	15.71	15.56	16.33	16.47
Business undertakings .....	29.81	28.75	28.12	27.04	25.59
Territorial: Land sales, rents, etc. ....	0.95	0.99	0.87	0.82	0.76
Other :					
Interest and exchange....	8.19	8.17	8.09	7.68	7.62
Fees, fines, rents, etc. ..	9.16	10.57	10.25	11.13	11.00
Commonwealth grants (a)	37.75	35.81	37.11	37.00	38.56
Total .....	100.00	100.00	100.00	100.00	100.00

(a) Includes grants under Financial Agreement and Financial Assistance Grants (originally entitled 'Tax Reimbursement')

## Taxation

Until the introduction of the uniform income tax scheme in 1942-43, income tax was the major source of taxation revenue in South Australia. Revenue from this form of taxation for the years 1939-40 to 1941-42 was \$4,718,000, \$4,952,000 and \$5,638,000 respectively or 51.70 per cent, 57.02 per cent, and 59.45 per cent of total revenue from taxation.



Other forms of State taxation are included in the table for the financial years 1963-64 to 1967-68; the major forms of taxation now left to the State are motor tax, succession and stamp duties, and land tax.

Early in 1969 an expanded receipts duty was introduced by the State Government. A duty of 1 cent in each \$10 (or part thereof) is payable on certain receipts including cash sales but excluding salaries and wages. Payment is effected by attachment of stamps to individual receipts or, on application to the Commissioner of Stamps, through a system of quarterly, half-yearly or annual returns.

For several years a stamp duty has been payable on hire purchase agreements. From early in 1969 a similar duty became applicable to a much wider range of instalment purchase, leasing and other lending transactions.

### Revenue from Taxation, South Australia

Tax	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Land tax .....	4,899	4,969	5,638	7,646	7,701
Succession duties .....	6,160	6,604	6,134	7,323	8,153
Racing tax (a) .....	1,468	1,664	1,676	1,588	1,373
Motor tax .....	10,651	(b) 11,398	(b) 11,917	(b) 12,466	(b) 12,877
Stamp duties .....	5,383	8,636	9,764	10,938	12,243
Liquor licences .....	747	1,095	1,142	1,672	2,236
Other licences .....	206	195	220	227	208
Hospital rating .....	311	341	361	409	435
Total (c) .....	29,825	34,901	36,852	42,270	45,226

### Proportion of Total Taxation

	Per Cent				
Land tax .....	16.43	14.24	15.30	18.09	17.03
Succession duties .....	20.65	18.92	16.65	17.32	18.03
Racing tax (a) .....	4.92	4.76	4.55	3.76	3.04
Motor tax .....	35.71	(b) 32.66	(b) 32.33	(b) 29.49	(b) 28.47
Stamp duties .....	18.05	24.74	26.49	25.88	27.07
Liquor licences .....	2.51	3.14	3.10	3.96	4.94
Other licences .....	0.69	0.56	0.60	0.54	0.46
Hospital rating .....	1.04	0.98	0.98	0.97	0.96
Total .....	100.00	100.00	100.00	100.00	100.00

(a) Amounts retained by racing and trotting clubs, or paid to those clubs by Betting Control Board are excluded. For the years 1963-64 to 1967-68 these amounts were: \$1,146,000, \$1,298,000, \$1,227,000, \$1,251,000 and \$1,059,000.

(b) Excludes road maintenance charges which were, for the years 1964-65 to 1967-68 respectively, \$1,426,000, \$1,903,000, \$2,070,000 and \$2,324,000.

(c) Excludes amounts paid to Hospitals Fund from lotteries and T.A.B., \$50,000 and \$88,000 respectively in 1966-67 and \$1,728,000 and \$820,000 respectively in 1967-68.

In addition to the fields of taxation open to the State Government, there are fields of taxation in which the Commonwealth Government has sole taxing authority, e.g. customs and excise duties (since Federation) and sales tax. Prior to 1942 the Commonwealth Government levied income tax in addition to that imposed by the States, but since the commencement of uniform taxation the Commonwealth Government has been the sole levier of income tax in practice,

although the States may still legally operate in this field. Total taxation collected by the Commonwealth Government in South Australia far exceeds that received into the State Consolidated Revenue Account; this is evident from the following table for the years 1963-64 to 1967-68.

### Commonwealth Taxation Collected, South Australia

Tax	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Income tax .....	135,569	176,310	188,763	192,760	210,650
Sales tax .....	28,431	33,224	31,014	30,253	32,076
Payroll tax .....	11,520	13,168	13,877	14,505	15,820
Customs duties .....	14,031	16,398	15,002	15,228	16,300
Excise duties (a) .....	45,368	50,363	62,295	65,889	71,707
Estate duty .....	3,212	4,584	3,958	4,110	4,910
Gift duty .....	772	1,053	731	707	804
Wool tax .....	736	1,507	1,912	1,958	1,399
Stevedoring industry charge	978	1,015	917	934	1,454
Other .....	298	346	299	355	377
Total .....	240,914	297,969	318,768	326,699	355,497
	\$	\$	\$	\$	\$
Per head of population ....	235.39	283.21	294.65	295.93	317.91

(a) Excludes net diesel fuel tax, non-commercial users.

### Business Undertakings

Business undertakings supply such services as passenger and freight rail carriage, sewerage, water supply, water storage, harbour facilities, etc. Produce stores provide refrigeration for the storage of goods in Adelaide whilst at Port Lincoln lambs, pigs and cattle are treated for export or local consumption. Revenue from business undertakings for the financial year 1938-39 was \$9,914,000, for 1957-58 \$50,156,000 and for 1967-68 it was \$70,256,000. Total revenue from business undertakings during each of the last five years and the proportion of that revenue to total Consolidated Revenue are shown on page 544. A dissection of revenue from business undertakings is given in the following table.

### Revenue from Business Undertakings, South Australia

Undertaking	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Railways (a) .....	37,829	37,572	37,763	38,084	38,611
Harbours, jetties and lights.	6,131	6,126	6,195	6,676	6,436
Sewers .....	5,398	5,742	6,705	7,201	7,539
Waterworks and water conservation .....	11,178	11,973	13,368	15,116	14,638
Irrigation and drainage ....	850	840	861	1,002	1,033
Produce stores .....	438	554	505	477	558
Forestry (b) .....	1,080	1,080	1,200	1,440	1,440
Total .....	62,904	63,887	66,597	69,996	70,256

(a) Includes grant from Treasury each year—\$8,000,000 in 1963-64, \$10,000,000 in 1967-68.

(b) Contribution to Consolidated Revenue from surplus earned. Figures for the other undertakings are total revenue.

**Payments from Consolidated Revenue Account**

Although public moneys from the Consolidated Revenue Account are expended by various government departments the following table shows expenditure on a functional basis.

**Consolidated Revenue Account: Expenditure**  
**Classified According to Functions, South Australia**

Function	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Legislation and general administration .....	12,049	12,471	13,956	15,529	16,712
Law, order, public safety ..	9,326	10,236	11,018	12,594	13,684
Regulation of trade and industry .....	669	751	757	816	911
Education .....	43,898	49,438	55,636	58,340	63,982
Encouragement of science, art and research .....	1,030	1,165	1,221	1,275	1,393
Promotion of public health and recreation .....	23,807	26,715	30,354	32,295	31,921
Social amelioration .....	3,380	3,667	4,097	4,584	4,811
War obligations .....	951	848	535	486	496
Local government .....	42	200	203	54	114
Development and maintenance of State resources other than business undertakings .....	15,926	17,344	17,736	18,148	19,293
Business undertakings .....	48,982	50,460	52,559	54,919	59,689
Public debt charges:					
Interest and exchange .....	39,988	43,099	46,495	49,884	53,861
Sinking fund .....	7,707	8,409	9,084	9,793	10,537
<b>Total .....</b>	<b>207,755</b>	<b>224,803</b>	<b>243,650</b>	<b>258,717</b>	<b>277,404</b>
	\$				
<b>Per head of population ....</b>	<b>203.00</b>	<b>213.67</b>	<b>225.21</b>	<b>234.35</b>	<b>248.07</b>

Public debt charges were 22.96 per cent of consolidated revenue expenditure in 1963-64 and 23.21 per cent in 1967-68. Apart from public debt charges and expenditure by business undertakings, expenditure on education, 21.13 per cent in 1963-64 and 23.06 per cent in 1967-68, exceeded that on other individual functions.

Expenditure on public health and recreation was 11.46 per cent of the total in 1963-64 and 11.51 per cent in 1967-68.

If the public debt charges are allocated to the various functions and all receipts, with the exception of revenue from taxation and Commonwealth grants, are offset against the payments for the corresponding functions, a table showing the 'net cost of functions' can be prepared. The following is such a table for the financial years 1966-67 and 1967-68, showing also the net cost per head of population.

Total net cost of functions increased in 1967-68 from the total in 1966-67 by \$16,041,000 (or 11.6 per cent). Net cost of education represented 42.0 per cent of the total net cost in 1967-68, an increase of approximately \$5,361,000 on expenditure on education in 1966-67. Total net cost per head of population rose by \$12.75.

**Consolidated Revenue Account: Expenditure**  
**Net Cost of Functions, South Australia**

Function	1966-67		1967-68	
	Net Cost	Per head of population	Net Cost	Per head of population
	\$'000	\$	\$'000	\$
Legislative and general administration ..	12,118	10.98	13,285	11.88
Law, order, and public safety .....	9,627	8.72	10,136	9.06
Regulation of trade and industry .....	457	0.41	485	0.43
Education .....	59,326	53.74	64,687	57.85
Encouragement of science, art and research .....	1,292	1.17	1,431	1.28
Promotion of public health and recreation .....	24,824	22.49	25,023	22.38
Social amelioration .....	4,107	3.72	4,349	3.89
War obligations .....	491	0.44	526	0.47
Local government .....	85	0.08	164	0.15
Development and maintenance of State resources other than business undertakings .....	14,081	12.75	15,990	14.30
Business undertakings .....	11,058	10.02	17,443	15.60
Revenue deficiencies .....	451	0.41	440	0.39
<b>Total .....</b>	<b>137,917</b>	<b>124.93</b>	<b>153,958</b>	<b>137.68</b>

**Business Undertakings, Expenditure**

Further details of the expenditure of business undertakings for the years 1963-64 to 1967-68 are given in the table below.

**Business Undertakings: Expenditure, South Australia**

Function	1963-64	1964-65	1965-66	1966-67	1967-68
			\$'000		
Railways .....	36,078	36,786	37,337	39,112	41,317
Navigation, harbours, lights	3,090	3,256	3,294	3,451	3,585
Water supply, sewerage, irrigation, and drainage..	9,351	9,912	11,416	11,777	14,152
Produce Department .....	463	505	512	580	634
<b>Total .....</b>	<b>48,982</b>	<b>50,460</b>	<b>52,559</b>	<b>54,919</b>	<b>59,689</b>

**TRUST FUNDS ACCOUNTS**

These are principally moneys lodged with the Treasurer by public authorities and other bodies on current account; funds held for specific purposes pursuant to legislation, not necessarily expendable in any one year; contractors' and statutory deposits and unclaimed moneys. At 30 June 1968 they represented slightly more than 13 per cent of indebtedness of the South Australian Government. Total balances at 30 June 1966, 1967 and 1968, with many of the larger balances itemised, are shown in the following table.

**Trust Funds Accounts, South Australia**  
*Balances at 30 June*

Particulars	1966	1967	1968
		\$'000	
Commissioners of Charitable Funds .....	1,128	1,244	1,379
Electricity Trust of South Australia .....	1,117	900	900
Fire Brigades Board .....	389	330	302
Legacy Club .....	126	33	14
Municipal Tramways Trust .....	550	550	550
Police Pensions Fund .....	200	157	227
Royal Adelaide Hospital Endowment Fund .....	741	778	817
South Australian Housing Trust Fund .....	1,221	851	3,025
South Australian Superannuation Fund .....	680	771	840
University of Adelaide .....	2,746	2,548	2,747
Sailors and Soldiers Distress Fund .....	129	112	81
Service Welfare Fund; 1939-45 War .....	163	145	121
Other .....	1,477	2,218	3,969
Balances on which interest is paid .....	10,667	10,637	14,972
Agricultural Research and Service Grants .....	192	193	217
Crown Solicitors Trust Account .....	323	576	714
Leigh Creek Coal Fund .....	1,021	631	621
Public Trustee; Common Fund Reserve .....	188	180	183
Commonwealth Grant towards Science Laboratories and Technical Training .....	139	50	48
Other .....	454	789	833
Balances on which no interest is paid .....	2,317	2,419	2,616
Total Trust Funds .....	12,985	13,056	17,588

### SPECIAL COMMONWEALTH ADVANCES

Pursuant to Commonwealth-State agreements, the Commonwealth has made sums available to the State for the erection of housing by State instrumentalities, for loans to home builders, and for railway standardisation purposes. These advances are not subject to sinking fund conditions but are repayable to the Commonwealth by annual instalments in terms of the respective agreements.

Advances received from the Commonwealth pursuant to the Housing Agreement totalled \$21,000,000 for 1967-68. Of these advances \$10,150,000 was allocated by the Treasurer to the South Australian Housing Trust, and \$10,850,000 to the Home Builders Fund. Liability of the State to the Commonwealth on this account at 30 June 1968 was \$201,763,000.

During 1967-68 funds provided by the Commonwealth for railway standardisation works totalled \$6,628,000. The State's liability to the Commonwealth at 30 June 1968 was \$10,190,000.

Under the *Railway Equipment Agreement (South Australia) Act 1961*, the Commonwealth agreed to make available to the State, funds up to a maximum of \$2,650,000 for the purposes of providing diesel locomotives and ore wagons for the Port Pirie-Broken Hill railway. Thirty per cent of the total amount advanced is repayable over a 50-year period, together with interest thereon. The State's liability to the Commonwealth at 30 June 1968 was \$712,000.

### LOAN FUND ACCOUNTS

These accounts record the capitalised expenditure on construction or acquisition of assets such as schools, reservoirs, hospitals, forests, plant and stores; advances to public authorities; and for primary production and housing. During

recent years some capital grants (e.g. for University, Advanced Education and non-Government hospital buildings) have also been made from loan funds.

State borrowing programmes are subject to consideration and agreement at meetings of the Australian Loan Council. Funds are raised by the sale of Commonwealth Government securities on behalf of the State pursuant to the Financial Agreement which also provides for the redemption of such securities over specified periods from sinking funds contributed by the State and Commonwealth to the National Debt Commission. Gross expenditure from these accounts for the years 1963-64 to 1967-68 is shown in the next table.

### Loan Fund Accounts: Gross Expenditure, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
<b>Undertakings:</b>					
Railways .....	5,028	6,400	5,565	4,815	5,394
Harbours and jetties ....	2,439	2,142	2,609	2,046	2,117
Metropolitan water supply and sewers .....	12,695	17,152	16,336	14,572	15,671
Country water supply and sewers (a) .....	10,725	11,948	10,426	9,404	11,284
Water conservation .....	16	(b)	9	88	34
Irrigation works .....	301	337	437	350	369
South Eastern drainage ..	1,016	902	669	523	548
Afforestation .....	2,090	1,880	2,044	1,900	2,250
Produce stores .....	40	132	193	100	74
<b>Loans and advances:</b>					
Advances to settlers, etc.	1,071	1,241	1,403	967	1,030
State Bank .....	2,000	1,000	1,000	—	—
Advances for housing....	600	600	700	700	700
Electricity Trust .....	5,500	6,000	6,000	6,700	6,700
City of Adelaide .....	—	87	340	700	48
Natural gas pipelines ....	—	—	—	—	1,000
Other loans and advances	396	366	319	95	374
<b>Other purposes:</b>					
Roads and bridges .....	950	—	—	—	—
<b>Buildings:</b>					
Hospitals .....	2,794	5,129	7,314	6,572	6,823
Schools .....	9,850	11,183	11,759	10,757	8,678
Police and courts ....	2,220	1,025	909	923	397
Other .....	2,195	4,364	3,965	5,751	3,842
River Murray weirs, etc.	240	390	644	645	393
Capital grants .....	—	—	—	8,802	7,191
Mines Department stores, etc. ....	364	295	304	162	208
Land repurchased for settlement .....	5	1	—	—	—
Education Department, purchase of buses .....	268	279	281	283	269
Data processing equipment	—	24	554	69	51
Metropolitan floodwaters, etc. ....	551	596	1,020	511	1,288
Renmark Irrigation Trust; improvements .....	—	—	—	—	201
Other .....	143	124	(c) 966	(c) 1,165	(c) 1,901
	63,497	73,597	75,766	78,599	78,835
<b>Floating conversion loans:</b>					
Expenses, etc. ....	100	43	192	185	224
<b>Total .....</b>	<b>63,597</b>	<b>73,639</b>	<b>75,958</b>	<b>78,784</b>	<b>79,058</b>

(a) Includes Morgan-Whyalla water main.

(b) Less than \$500.

(c) Includes \$791,000 in 1965-66, \$975,000 in 1966-67 and \$1,720,000 in 1967-68 nominal increase in Loan Account occasioned by repatriation of overseas debt.

The following table shows expenditure from loan fund accounts for the year ended 30 June 1968 together with credits and net balances.

**Loan Fund Accounts**  
**Gross Expenditure, Credits, and Net Balances, South Australia, 1967-68**

Particulars	Expenditure	Credits			Net Aggregate Balance at 30 June
		Repay-ments, etc.	Sinking Fund (a)	Total	
				\$'000	
Undertakings :					
Railways .....	5,394	675	1,571	2,246	130,667
Harbours and jetties .....	2,117	409	563	972	44,872
Metropolitan water supply and sewers .....	15,671	1,610	1,387	2,997	180,091
Country water supply and sewers (b) .....	11,284	889	1,164	2,053	127,096
Water conservation .....	34	(c)	44	44	2,061
Irrigation works .....	369	65	148	213	11,256
South-Eastern drainage .....	548	9	20	29	14,662
Afforestation .....	2,250	35	—	35	15,936
Produce stores .....	74	(c)	41	41	1,509
Loans and advances :					
Soldier settlement .....	—	86	—	86	6,216
Advances to settlers, etc. ....	1,030	997	—	997	8,114
State Bank .....	—	5	61	67	13,854
Advances for housing .....	700	1,673	300	1,973	81,003
Tramways Trust .....	—	28	572	600	8,668
Abattoirs Board .....	—	5	23	28	1,535
Electricity Trust .....	6,700	351	770	1,121	136,237
City of Adelaide .....	48	384	—	384	791
Natural Gas Pipelines .....	1,000	—	—	—	1,000
Other loans and advances ....	374	61	17	78	2,344
Other purposes :					
Roads and bridges .....	—	—	113	113	8,586
Government Buildings ;					
Hospitals .....	6,823	926	491	1,417	60,992
Schools .....	8,678	256	1,355	1,611	117,593
Police and courts .....	397	4	74	78	11,615
Other .....	3,842	85	236	322	29,733
River Murray weirs, etc. ....	393	—	—	—	12,997
Capital grants .....	7,191	2,378	235	2,613	11,341
Mines Department stores, etc.	208	81	134	215	1,578
Land repurchased for settlement	—	64	—	64	1,430
Education Department, purchase of buses .....	269	—	256	256	1,148
Data processing equipment ...	51	—	115	115	471
Metropolitan floodwaters, etc. .	1,288	12	3	15	5,209
Leigh Creek coalfield .....	—	600	76	676	6,295
Renmark Irrigation Trust improvements .....	201	—	—	—	201
Other .....	181	204	71	275	3,075
	77,115	11,892	9,841	21,733	1,060,179
Repatriation of overseas loans ...	1,720	—	1,720	1,720	—
Floating conversion loans :					
Expenses, etc. ....	224	224	—	224	—
Revenue deficits funded .....	—	—	346	346	9,122
Total .....	79,058	12,116	11,907	24,023	1,069,301

(a) Securities redeemed and cancelled by the National Debt Commission on account of South Australia.

(b) Includes Morgan-Whyalla water main. (c) Less than \$500.

## LOAN RAISINGS AND THE PUBLIC DEBT

### State Debts Taken Over by Commonwealth

Under the financial agreement the Commonwealth took over on 1 July 1929 State responsibilities to bond-holders in respect of State debts existing on 30 June 1927; and all debts of each State existing on 1 July 1929 for money borrowed by that State are deemed to be money borrowed by the Commonwealth for and on behalf of the State. The Commonwealth agreed to contribute one third of sinking funds required to repay those debts over a period of fifty-eight years.

Also for a period of fifty-eight years from 1 July 1927 the Commonwealth agreed to contribute the sum of \$15,169,824 (\$1,407,632 for South Australia) each year towards the interest payable on the State debts. The balance of the interest payable on State debts was to be paid into the National Debt Sinking Fund by the States.

### Australian Loan Council

One of the main features of the financial agreement was the establishment of the Australian Loan Council which was set up to co-ordinate the borrowings of the Commonwealth and the States. It consists of the Prime Minister of the Commonwealth, or another Minister nominated by him in writing, as chairman, and the State Premiers, or Ministers nominated by them in writing. Each year, the Loan Council examines the loan programmes of the Commonwealth and the States and determines the total amount to be borrowed during the year. Borrowings by the Commonwealth for defence purposes are not subject to decisions of the Loan Council.

Subject to the decisions of the Loan Council the Commonwealth arranges for all borrowings for or on behalf of itself or any State, and for all conversions, renewals, redemptions, and consolidations of the securities issued on behalf of the Commonwealth and of the States.

If the Loan Council unanimously decides, however, a State may borrow outside Australia in its own name, and may issue securities for the amount so borrowed. The Commonwealth then guarantees that the State will fulfil its obligations to bond-holders in respect of the money so borrowed, and the money is deemed to be borrowed by the Commonwealth for and on behalf of the State.

Subject to any maximum limits decided upon by the Loan Council for interest, brokerage, discount, and other charges, the Commonwealth or any State may borrow within its own territory, for any purpose, money from any authorities, bodies, funds, or institutions (including savings banks) constituted or established under Commonwealth or State law or practice; borrow from the public by means of counter sales of securities; and use any available public moneys.

However, any securities issued for moneys so borrowed or used must be Commonwealth securities on terms approved by the Loan Council.

Since 1936 the Australian Loan Council has, by the consent of its members, exercised substantial control over the limits of borrowing by local government and semi-government authorities.

### National Debt Commission

The National Debt Commission and the National Debt Sinking Fund which it administers were created under the *National Debt Sinking Fund Act 1923*. All previously existing sinking funds relating to Commonwealth debt were merged in the National Debt Sinking Fund at the time of its establishment; and under the provisions of the Financial Agreement of 1927 all relevant interest and principal



contributions by both the Commonwealth and the States, in respect of State debts, are negotiated through the Fund.

These contributions are not accumulated but are applied by the Commission to the redemption of the public debts of the States, and the repurchase of securities issued in respect thereof. Under the provisions of the Financial Agreement, repurchased or redeemed securities must be cancelled, and the debts of the States are reduced accordingly. Contributions by the Commonwealth on behalf of South Australia, and by the State Government to the National Debt Sinking Fund, and redemptions and repurchases of securities by payment from the fund for the financial years 1966-67 and 1967-68 are given in the following table. Corresponding figures for Australia are also stated.

#### National Debt Sinking Fund

Particulars	1966-67		1967-68	
	South Australia	Australia	South Australia	Australia
<b>Receipts:</b>	\$'000			
Contributions by Commonwealth ....	2,482	18,951	2,673	20,387
Contributions by State (a) .....	2,735	20,999	2,924	22,423
4½ per cent contributions by State on cancelled debt .....	5,834	44,782	6,250	47,929
4 per cent contributions on funded deficits .....	56	2,443	50	2,472
Contributions by State on loans for wasting assets .....	195	643	221	662
Interest received from State in respect of repurchased securities to date of cancellation of securities .....	17	113	9	93
Interest on the temporary investments of State funds during the year ....	Dr. 4	Dr. 46	9	48
Special contributions in respect of loans converted at a discount .....	20	220	20	143
<b>Total receipts .....</b>	<b>11,335</b>	<b>88,105</b>	<b>12,156</b>	<b>94,157</b>
<b>Expenditure:</b>				
Redemptions and repurchases;				
In Australia .....	8,666	59,451	4,332	50,568
In London .....	1,231	16,545	6,679	31,815
In New York .....	1,151	10,441	1,271	11,330
In Canada .....	93	680	85	631
Netherlands .....	—	—	69	543
<b>Total expenditure .....</b>	<b>11,140</b>	<b>87,118</b>	<b>12,436</b>	<b>94,886</b>

(a) Includes \$1.50 per cent contributions on Commonwealth Government debentures issued on behalf of the States.

For further information on the detailed operations of the National Debt Sinking Fund see the *Official Year Book of the Commonwealth of Australia*.

#### The Loan Fund

A summary of loan raisings to finance State Government loan works in South Australia during 1967-68 is given by the following statement. The total face value of new loans raised less redemptions, cancellations, and conversions shows the movement in the public debt.

## The Loan Fund, South Australia

(1) <i>Cash operations:</i>	\$'000	\$'000
Deficit at 30 June 1967 . . . . .		1,206
Receipts:		
New loan raising . . . . .		71,820
Repayments . . . . .		12,116
		<hr/> 82,730
Payments . . . . .		<hr/> 77,072
Surplus at 30 June 1968 . . . . .		<hr/> 5,658
(2) <i>Movement in public debt:</i>		
The public debt at 30 June 1967 . . . . .		1,013,060
Add: Face value of new loans raised:		
For cash . . . . .		72,087
For conversion . . . . .		97,579
		<hr/> 1,182,726
Less: Face value of securities redeemed and cancelled by National Debt Commission	10,187	
Loans converted . . . . .	<hr/> 97,579	<hr/> 107,766
The public debt at 30 June 1968 . . . . .		1,074,959

## The Public Debt

The following table gives details of the public debt and total indebtedness of South Australia at 30 June 1968 and for nine previous years. A further table shows the annual interest payable on the public debt for these years and the average rate of interest.

## Public Debt and Total Indebtedness, South Australia

At 30 June

Year	Public Debt—Being Interest Bearing Securities Outstanding		Other Interest Bearing Indebtedness (a)	Non-Interest Bearing Indebtedness (a)	Total Indebtedness	
	Total	Per Head			Total	Per Head
	\$'000	\$	\$'000	\$'000	\$'000	\$
1959 . . . . .	635,404	690.00	58,566	1,872	695,842	755.70
1960 . . . . .	678,210	717.50	69,201	2,327	749,739	793.20
1961 . . . . .	722,038	743.20	82,253	2,291	806,582	830.30
1962 . . . . .	763,399	773.10	98,841	2,166	864,405	875.40
1963 . . . . .	807,044	798.50	120,954	2,232	930,230	920.30
1964 . . . . .	853,555	822.30	136,236	2,685	992,477	956.10
1965 . . . . .	902,823	845.70	157,484	2,989	1,063,297	996.00
1966 . . . . .	955,128	872.30	180,466	2,317	1,137,911	1,039.20
1967 . . . . .	1,013,060	911.50	201,885	2,419	1,217,363	1,095.30
1968 . . . . .	1,074,959	955.34	227,933	2,616	1,305,508	1,160.23

(a) Gross less securities held on these accounts.

## Public Debt: Interest and Average Rate, South Australia

At 30 June

Year	Annual Interest on Debt (a) in				Average Rate Per Cent (a)			
	Aus- tralia	London	Other	Total	Australia	London	Other	Total
	\$'000				\$			
1959....	22,887	2,214	493	25,594	4.10	3.36	4.51	4.03
1960....	25,223	2,185	582	27,991	4.20	3.36	4.69	4.13
1961....	27,415	2,204	850	30,468	4.28	3.42	4.91	4.22
1962....	30,374	2,181	975	33,530	4.47	3.41	5.03	4.39
1963....	31,672	2,347	1,231	35,249	4.43	3.50	5.13	4.37
1964....	33,612	2,534	1,193	37,339	4.42	3.61	5.13	4.38
1965....	37,088	2,530	1,137	40,756	4.57	3.65	5.13	4.51
1966....	40,928	2,360	1,267	44,555	4.73	3.65	5.21	4.66
1967....	44,808	2,323	1,176	48,307	4.83	3.66	5.27	4.77
1968....	48,868	1,883	1,098	51,848	4.87	3.72	5.27	4.82

(a) Based on the Debt converted at rates current at the time of the several raisings, and nominal rate of interest payable at 30 June taking no account of exchange.

Rates of interest and years of maturity on the public debt of South Australia are shown below.

## Public Debt According to Rate of Interest, South Australia

At 30 June

Nominal Rate Per Cent	1964	1965	1966	1967	1968		
					Total	Redeemable In	
						Australia	Other (a)
				\$'000			
6	1,322	1,322	1,322	1,322	1,322	—	1,322
5.75	1,956	1,903	5,283	5,180	4,884	—	4,884
5.5	18,164	17,898	17,285	16,883	16,436	—	16,436
5.375	35,172	35,172	35,172	35,172	35,172	35,172	—
5.25	20,634	47,298	105,188	150,001	220,432	217,103	3,328
5	197,648	247,879	342,316	397,111	394,673	391,461	3,212
4.8	—	—	—	—	31,944	31,944	—
4.75	67,132	78,988	78,888	67,159	56,470	54,707	1,763
4.625	7,458	7,458	7,458	7,458	7,458	7,458	—
4.5	168,836	171,263	154,644	172,114	154,818	152,995	1,823
4.25	92,892	96,169	63,101	41,143	41,143	41,143	—
4	36,096	36,096	9,794	9,604	4,239	197	4,042
3.75	42,438	42,423	26,592	300	275	—	275
3.5	864	852	844	—	—	—	—
3.4875	2	2	2	2	2	2	—
3.25	22,748	21,889	21,049	20,149	20,049	—	20,049
3.125	62,358	9,842	—	—	—	—	—
3	16,230	16,130	12,453	12,446	5,036	242	4,794
2.75	3,768	3,769	3,709	3,709	3,689	—	3,689
2.5	5,872	5,872	5,872	5,872	5,872	—	5,872
2.325	690	656	652	623	621	621	—
1.5	5,702	5,530	5,355	5,177	4,997	4,997	—
1 (b)	6,754	6,516	6,268	6,009	5,738	5,738	—
Special bonds (c)	38,822	47,900	51,882	55,627	59,691	59,691	—
Total	853,556	902,823	955,128	1,013,060	1,074,959	1,003,471	71,489

(a) \$50,643,000 redeemable in U.K., \$16,892,000 in U.S.A., \$1,582,000 in Canada, \$1,402,000 in Switzerland and \$969,000 in Netherlands. Converted at rates current at the time of the several raisings. Debt redeemable at rates of exchange obtaining at 30 June 1968 totalled \$74,003,669, resulting in a contingent liability of \$2,515,041.

(b) Commonwealth Debentures.

(c) Rate of interest varies from 4 to 5½% according to date of maturity.

**Public Debt According to Year of Maturity, South Australia**  
**At 30 June**

Year of Maturity	1964	1965	1966	1967	1968		
					Total	Redeemable In	
						Australia	Other (a)
				\$'000			
1964-65	84,498	—	—	—	—	—	—
1965-66	105,510	105,441	—	—	—	—	—
1966-67	72,836	85,157	85,149	—	—	—	—
1967-68	58,980	74,076	102,072	105,014	—	—	—
1968-69	59,080	59,080	68,011	72,185	72,016	72,016	—
1969-70	35,376	34,501	59,663	128,224	127,744	114,118	13,625
1970-71	32,930	32,893	32,796	40,365	89,676	85,213	4,463
1971-72	29,174	31,591	31,472	40,092	39,606	35,061	4,545
1972-73	53,420	53,283	53,183	63,062	62,517	60,754	1,763
1973-74	18,302	18,302	18,302	32,227	31,872	31,872	—
1974-75	33,532	54,466	59,218	59,218	65,198	52,627	12,570
1975-76	25,528	25,527	52,451	57,021	60,428	58,369	2,058
1976-77	402	402	402	31,171	31,171	31,171	—
1977-78	3,468	3,467	3,467	3,467	44,436	41,390	3,047
1978-79	6,578	6,429	6,278	6,139	5,988	439	5,548
1979-80	32,074	31,916	31,764	31,609	31,436	29,783	1,653
1980-85	100,164	175,714	181,633	180,966	180,197	166,078	14,120
1985-90	53,222	53,156	107,980	129,158	171,732	168,430	3,302
1990-95	3,718	3,613	3,506	3,397	3,287	3,287	—
1995-2000	—	—	—	—	—	—	—
2000-2005	—	—	—	23,882	51,798	51,798	—
Variable (b)	38,822	47,900	51,882	—	—	—	—
Optional	5,744	5,711	5,699	5,663	5,658	863	4,794
Interminable	197	197	197	197	197	197	—
Indefinite	2	2	2	2	2	2	—
Total	853,556	902,823	955,128	1,013,060	1,074,959	1,003,471	71,489

(a) See footnote (a) preceding table.

(b) From 1966-67 onwards, Special Bonds have been allocated to the latest year in which redemption can be made.

### DEPOSIT AND SUSPENSE ACCOUNTS

Reference to these accounts was made in Part 12.1. Although the main function of many of them is to facilitate the allocation of charges and recoups to various headings of revenue and expenditure within the budget sector, some contain, as already noted, substantial transactions which are not reflected in the Budget. Deposit and Suspense accounts showed a credit balance of \$18,561,000 at 30 June 1968.

## 12.4 SEMI-GOVERNMENT FINANCE

### REVENUE AND EXPENDITURE

Many semi-governmental authorities produce annual reports reviewing their activities and most of them publish annual financial statements. In South Australia there is no consolidated tabulation of statistics covering revenue and expenditure of semi-governmental authorities although a recent extension of public finance work is directed to this end.

#### Business Undertakings

Some semi-governmental authorities are regarded as business undertakings because they seek to cover a substantial part of their costs by selling goods and services to the public. The following tables show revenue and expenditure of some of those business undertakings for the financial years 1963-64 to 1967-68.

Capital indebtedness refers to the amount outstanding at the end of the relevant period on indebtedness incurred initially for a period exceeding twelve months.

### The Electricity Trust of South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Income .....	40,066	44,046	48,792	51,156	56,106
Operating expenses .....	29,903	32,877	37,008	38,895	42,891
Surplus on operating ....	10,163	11,169	11,784	12,261	13,214
Debenture interest .....	9,263	10,059	10,830	11,742	12,638
Net surplus .....	900	1,110	955	518	577
Capital indebtedness .....	196,291	207,386	219,237	232,514	248,035

### The Municipal Tramways Trust

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Income .....	5,473	5,899	6,049	6,270	6,225
Operating expenses .....	5,194	5,487	5,806	5,947	5,879
Surplus on operating ....	279	411	243	323	346
Interest charges .....	516	518	505	474	431
Deficit .....	237	108	261	151	85
Grant from S.A. Government	60	20	20	20	20
Net deficit .....	177	87	241	131	65
Capital indebtedness .....	11,265	10,639	9,686	8,740	8,143

### The Leigh Creek Coal Fund

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Income .....	5,365	5,740	6,103	5,716	5,873
Operating expenses .....	5,076	5,493	5,883	5,627	5,812
Surplus on operating ....	289	247	220	89	61
Interest .....	208	151	121	89	61
Net surplus .....	81	96	99	—	—
Capital indebtedness .....	8,909	8,318	7,645	6,971	6,295

**The South Australian Housing Trust**

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
			\$'000		
Income .....	10,410	11,279	12,502	13,423	14,601
Expenditure .....	4,501	4,937	5,513	5,779	6,315
Surplus on operating .....	5,909	6,342	6,989	7,644	8,286
Interest on loan capital .....	5,068	5,428	5,847	6,508	7,286
Net surplus .....	841	914	1,142	1,136	1,001
Capital indebtedness .....	161,679	174,202	187,641	200,462	213,207

**The State Bank of South Australia**

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
			\$'000		
Income .....	3,884	4,640	5,452	6,274	7,059
Management expenses, etc. ....	1,038	1,095	1,181	1,343	1,398
Interest on customers' deposits .....	458	506	678	741	934
Interest on advances from the Treasurer of S.A. ....	1,898	2,402	2,919	3,444	3,904
Net profit .....	490	638	674	747	822
Capital indebtedness .....	47,598	58,472	69,323	78,978	88,820

**The Savings Bank of South Australia**

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
			\$'000		
Income .....	14,194	15,924	17,336	18,574	19,833
Management expenses, etc. ....	3,386	3,669	4,244	4,853	5,205
Interest on customers' deposits .....	9,716	10,672	11,975	12,672	13,530
Net profit .....	1,092	1,583	1,117	1,049	1,098
Depositors' balances (a) ....	304,271	322,841	343,062	362,190	377,523

(a) At end of period. Figures include deposit stock.

**GRANTS FROM STATE GOVERNMENT**

The following table shows grants to a number of semi-government authorities during each of the five years ended 30 June 1968. Grants from Consolidated Revenue and from Loan Fund have been consolidated and the figures represent actual amounts paid to authorities, free of all duplication. Payments for goods and services supplied by semi-government business undertakings are not included in the table. Repayable advances from Loan Fund are also excluded.

## Semi-Government Authorities: Grants From State Government

Name	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Adelaide Children's Hospital (a) .....	1,970	1,874	1,790	2,458	2,889
Adelaide and Flinders Universities (b) .....	6,988	9,026	10,799	10,709	12,835
Artificial Breeding Board ..	38	53	38	—	—
Electricity Trust of South Australia .....	170	499	—	—	—
Fire Brigades Board .....	152	162	191	204	228
Home for Incurables (a) .....	310	576	1,001	1,760	960
Institute of Medical and Veterinary Science .....	574	676	710	875	1,002
Municipal Tramways Trust ..	60	20	20	20	20
National Park Commissioners	78	116	119	110	114
Queen Victoria Maternity Hospital (c) .....	248	823	1,632	1,594	685
Renmark Irrigation Trust ..	300	300	300	3	151
S.A. Institute of Technology (d) .....	1,330	1,386	1,740	2,921	3,013
Waite Agricultural Research Institute .....	824	1,040	1,080	1,064	1,162
Total .....	13,042	16,551	19,420	21,718	23,059

(a) Amounts subsequently recouped to Consolidated Revenue from Hospitals Fund are included.

(b) Includes State Government disbursement of Commonwealth grants except those for residential colleges.

(c) Excludes grants for maintenance of X-ray tuberculosis services. (d) Includes Commonwealth grants.

## LOAN RAISINGS AND DEBT OUTSTANDING

Details of semi-government authorities loan raisings and debt outstandings are published in the tables below. These statistics cover loan raisings and debt of public hospitals, abattoirs boards, vermin boards, the Renmark Irrigation Trust, the Enfield General Cemetery Trust, and the Fire Brigades Board, in addition to those business undertakings mentioned above under the heading Revenue and Expenditure.

New loans raised during the year include new loan liabilities incurred during the year, loans raised to repay indebtedness to the Government, and interest capitalised. Loans raised and redeemed within the year, increases in overdrafts, and loans raised for conversion or redemption of existing debts are excluded.

Debt includes all liabilities for which arrangements have been made for repayment over a period of one year or more, and net overdrafts. Interest capitalised, and amounts due for the capital cost of assets or for services rendered which are to be repaid over a period of one year or more, have also been included. Current liabilities such as interest accrued (but not capitalised), trade creditors, amounts held in trust and other debts which are to be repaid in less than one year are not included. Net overdraft is the gross overdraft of all funds, less all bank credit balances (including fixed deposits), which do not form part of a sinking fund to repay a loan.

The next two tables show, respectively, new money loan raisings for the years ended 30 June 1966 and 30 June 1967 and debt outstanding as at 30 June 1966 and 1967. A further table shows debt outstanding as at 30 June 1967 according to rate of interest and year of maturity.

**Semi-Government Authorities: New Money Loan Raisings and Funds  
Provided for Redemption of Debt, South Australia, 1965-66 and 1966-67**

Authority	New Loan Raisings in Australia			Funds for Redemption of Debt (a)		
	From Government Lenders	Other	Total	To Government Lenders	Other	Total
	\$'000			\$'000		
<b>1965-66:</b>						
Tramways .....	—	—	—	955	—	955
Electricity supply ..	6,000	7,218	13,218	968	400	1,368
Fire Brigades ....	—	—	—	—	4	4
Hospitals .....	—	36	36	—	2	2
Industry assistance ..	—	—	—	2	—	2
Banking .....	11,696	—	11,696	1,128	—	1,128
Housing .....	10,200	4,430	14,630	1,033	157	1,191
Miscellaneous ....	48	—	48	34	11	45
<b>Total 1965-66 .</b>	<b>27,944</b>	<b>11,684</b>	<b>39,628</b>	<b>4,119</b>	<b>575</b>	<b>4,694</b>
<b>1966-67:</b>						
Tramways .....	—	—	—	150	—	150
Electricity supply ..	6,700	7,666	14,366	1,041	47	1,088
Fire Brigades ....	—	—	—	—	4	4
Hospitals .....	—	—	—	—	1	1
Industry assistance ..	—	—	—	4	—	4
Banking .....	10,697	—	10,697	1,358	—	1,358
Housing .....	10,000	4,170	14,170	1,133	216	1,349
Miscellaneous ....	68	700	768	35	20	56
<b>Total 1966-67 .</b>	<b>27,465</b>	<b>12,536</b>	<b>40,001</b>	<b>3,720</b>	<b>289</b>	<b>4,010</b>

(a) Includes amounts credited to Sinking Funds and excludes amounts redeemed from Sinking Funds.

**Semi-Government Authorities: Debt Outstanding, South Australia**

*At 30 June 1966 and 1967*

Authority	Debt in Australia as at					
	30 June 1966			30 June 1967		
	To Government Lenders	Other	Total	To Government Lenders	Other	Total
	\$'000			\$'000		
Tramways .....	9,686	—	9,686	8,740	—	8,740
Electricity supply ..	124,100	95,137	219,237	129,759	102,755	232,514
Fire Brigades ....	—	54	54	—	50	50
Hospitals .....	—	86	86	—	80	80
Industry assistance ..	9	—	9	5	—	5
Banking .....	69,323	—	69,323	78,978	—	78,978
Housing .....	158,065	29,576	187,641	166,932	33,530	200,462
Miscellaneous ....	1,962	103	2,065	1,994	1,097	3,092
<b>Total debt ...</b>	<b>363,146</b>	<b>124,956</b>	<b>488,102</b>	<b>386,408</b>	<b>137,512</b>	<b>523,919</b>
	<b>Annual Interest Payable (\$'000)</b>					
<b>Total interest .</b>	<b>16,437</b>	<b>6,615</b>	<b>23,052</b>	<b>17,586</b>	<b>7,328</b>	<b>24,914</b>



**Semi-Government Authorities: Debt Outstanding According to  
Rate of Interest and Year of Maturity, South Australia**

*At 30 June 1967*

Rate of Interest	Debt	Year of Maturity	Debt
	\$'000		\$'000
No interest .....	6	Fixed dates :	
Under 3 per cent .....	99	1967-68 .....	9,352
3 and under 3½ per cent .....	19,890	1968-69 .....	15,513
3½ and under 4 per cent .....	12,766	1969-70 .....	6,688
4 and under 4½ per cent .....	95,663	1970-71 .....	6,972
4½ and under 5 per cent .....	173,652	1971-72 .....	7,997
5 and under 5½ per cent .....	161,379	1972-73 .....	6,948
5½ and under 6 per cent .....	58,789	1973-74 .....	7,628
6 per cent and over .....	40	1974-75 .....	4,644
Not specified .....	1,637	1975-76 .....	4,500
		1976-77 .....	3,296
		1977-78 .....	4,439
		1978-79 .....	7,953
		1979-80 .....	7,724
		1980-81 and onwards .....	16,667
		Not stated .....	15,965
		Instalments :	
		Yearly or less .....	397,146
		Not stated .....	245
		Net overdraft .....	245
Total debt .....	523,919	Total debt .....	523,919

## 12.5 LOCAL GOVERNMENT FINANCE

For the purpose of determining the scope of local government finance statistics, a local government authority is defined as:

- (i) An authority set up under a local government Act to carry out the functions of local government in a defined area (known as a municipality, city, corporate town, or district council area) and which is elected by the residents or property owners, or both, in the area.
- (ii) An authority created or acquired by a local government authority (as defined above) or by two or more local government authorities.

### REVENUE AND EXPENDITURE

At the beginning of this chapter it was mentioned that the expenditure of monies by local government bodies was authorised by the Local Government Act, 1934-1969. This authorisation appears in Part XV, sections 287-90, of the Act while section 284 sets out the revenue of a council. Section 296 (1) of this part reads as follows:

‘On or before the first day of November in every year, the council shall cause to be prepared a statement of and balance-sheet of the accounts of the council for the financial year then last past.’

These statements are the basis of the statistics on receipts and payments of local government authorities published in this section on local government finance.

Regulations which were passed late in 1967 provide for a new format for local government accounting records effective from 1 July 1968. The main conceptual change is the adoption of the accrual method to replace the cash basis of accounting.

### **Assessments**

Assessments for property rating are based upon annual value or land value. Briefly, annual value is based on the estimated gross annual rental at which a ratable property would be let from year to year with an allowance, not exceeding one-fourth, to cover all outgoings; whereas land value is an estimate of the value of the land (regardless of structural improvements) included in a property. A council may adopt the 'annual' valuations used by the Engineering and Water Supply Department, the 'land' valuations used by the Commissioner of Land Tax or may make its own valuation of properties. At 30 June 1968, 45 out of 142 councils based assessments on land value.

### **Rating of Properties**

Under the provisions of the Act, the council may declare a general rate on the property assessed for the financial year ending the thirtieth day of June next after the declaring of the rate. A differential rate may be declared, for any portion of a local government area, if at least three-quarters in number of the whole of the members of the council vote in favour of the declaring of the rate; the mayor shall not be included as one of the members of the whole number.

The Act also provides for 'a particular rate for defraying the expense of watering any public street or road or place'. The council may levy this watering rate without the consent of the ratepayers. However, it needs their consent to levy a special rate 'if the general rate is insufficient for carrying out any purpose by this or any other Act authorised to be carried out by the council'. These and other provisions are contained in Part XII.

### **Government Grants**

Government grants for construction and maintenance of roads are covered by Part XVI of the Act; Section 299 (1) and (2) are as follows:

299 (1) The Governor may direct that in any financial year there shall be payable out of the Highway Fund established under the Highways Act, 1926-1967, an amount as grants to councils.

(2) Subject to Section 300, the said amount shall be divided among such councils, and in such proportions, as the Governor, on the recommendation of the Commissioner of Highways may think fit.

Section 300 sets the division of the total grants between metropolitan and non-metropolitan councils at 25 per cent and 75 per cent respectively. ('Metropolitan' here means the 21 local government areas constituting the metropolitan area under the Local Government Act: this was the metropolitan area for population census purposes prior to the census of 30 June 1966.) Section 300 (a) makes provision for an additional grant for roads to the Corporation of the City of Adelaide.

### **Revenue Receipts and Payments**

The following tables show the receipts and payments of local government authorities: the first table shows detailed particulars for the year 1966-67 and the second contains a summary for the years 1962-63 to 1966-67.

**Local Government Authorities: Revenue Receipts and Payments**  
**South Australia, 1966-67**

Particulars	Adelaide Statistical Division (a)	Other Areas	Total
<b>Receipts:</b>	<b>\$'000</b>		
Taxation;			
Rates, including arrears and fines .....	15,680	7,195	22,875
Licences, dog and other .....	145	76	222
Public works and services;			
Health activities .....	177	164	340
Council property .....	1,157	503	1,660
Road work;			
Reimbursement from Highways Department	1,473	3,543	5,016
Other .....	3,770	1,092	4,863
Other .....	222	166	388
Government grants .....	628	3,616	4,244
Business undertakings .....	471	1,702	2,174
Other .....	401	136	537
<b>Total receipts .....</b>	<b>24,125</b>	<b>18,194</b>	<b>42,319</b>
<b>Payments:</b>			
Administration .....	2,515	1,053	3,568
Debt services (including business undertakings);			
Interest .....	1,680	440	2,120
Principal .....	1,533	1,358	2,891
Public works and services;			
Roads and bridges .....	10,200	11,568	21,768
Health services .....	1,941	798	2,739
Street lighting .....	727	159	886
Council property .....	3,253	1,074	4,326
Fire brigades .....	339	186	526
Other .....	286	318	604
Grants; Charities and other .....	62	48	111
Business undertakings .....	485	1,339	1,824
Other .....	10	1	11
<b>Total payments .....</b>	<b>23,033</b>	<b>18,342</b>	<b>41,375</b>

(a) Adjusted to include the whole of Meadows and Willunga District Council areas and to exclude the whole of Mudla Wirra.

**Local Government Authorities: Revenue Receipts and Payments**  
**South Australia**

Year	Revenue Receipts			Revenue Payments			
	Government Grants (a)	Rates	Total (Including Other)	Adminis- tration	Roads and Bridges	Health and Sanitary	Total (Including Other)
	<b>\$'000</b>						
1962-63 ..	3,215	15,943	29,094	2,499	16,355	1,988	28,915
1963-64 ..	4,317	16,968	33,725	2,577	19,823	2,109	33,763
1964-65 ..	3,804	18,625	33,952	2,931	19,403	2,311	34,834
1965-66 ..	4,106	20,412	38,020	3,252	21,122	2,503	38,907
1966-67 ..	4,244	22,875	42,319	3,568	21,768	2,739	41,375

(a) Excludes re-imbursement for work done on behalf of Highways Department.

## LOAN RAISINGS AND DEBT OUTSTANDING

Local government authorities loan raisings and debts outstanding are shown in the following tables. The definitions of 'new loans raised' and 'debt', given on page 559 under 'Loan Raisings and Debt Outstanding', apply to the statistics in this section also.

The tables given below show new money loan raisings and debt outstanding for the years 1957-58 to 1966-67. A further table shows debt outstanding at 30 June 1967 according to rate of interest.

**Local Government Authorities: New Money Loan Raisings and  
Funds Provided for Redemption of Debt, South Australia**

Year	New Loan Raisings in Australia			Funds for Redemption of Debt(a)		
	From Govt	Other	Total	To Govt	Other	Total
	\$'000					
1957-58 .....	794	1,854	2,648	906	356	1,262
1958-59 .....	926	1,866	2,792	682	462	1,144
1959-60 .....	662	2,036	2,698	661	511	1,172
1960-61 .....	1,409	2,501	3,910	681	577	1,258
1961-62 .....	831	3,613	4,444	807	643	1,450
1962-63 .....	1,157	3,959	5,116	860	778	1,638
1963-64 .....	1,518	5,118	6,636	917	1,258	2,175
1964-65 .....	726	5,391	6,117	1,038	1,219	2,258
1965-66(b) .....	3,263	5,282	8,545	1,144	1,331	2,474
1966-67 .....	2,291	6,981	9,272	1,101	1,817	2,917

(a) Includes amounts credited to Sinking Funds and excludes amounts redeemed from Sinking Funds: both these figures are small in South Australia.

(b) From 1965-66 includes South-Western Suburbs Drainage Scheme.

**Local Government Authorities: Debt Outstanding and  
Annual Interest Payable, South Australia**

Year	Debt in Australia			Annual Interest Payable		
	To Govt	Other	Total	To Govt	Other	Total
	\$'000					
1957-58 .....	2,227	7,995	10,222	46	386	432
1958-59 .....	2,632	9,308	11,940	54	460	514
1959-60 .....	2,613	10,767	13,380	58	544	602
1960-61 .....	3,336	12,700	16,036	67	653	720
1961-62 .....	3,365	15,933	19,298	87	837	924
1962-63 .....	3,673	18,953	22,626	85	1,011	1,096
1963-64 .....	4,296	23,226	27,522	99	1,234	1,333
1964-65 .....	4,069	27,235	31,304	103	1,443	1,546
1965-66(a) .....	6,185	31,160	37,345	256	1,674	1,931
1966-67 .....	7,368	36,350	43,718	324	1,980	2,305

(a) From 1965-66 includes South-Western Suburbs Drainage Scheme.

**Local Government Authorities: Debt Outstanding  
According to Rate of Interest and Purpose, South Australia**

*At 30 June 1967*

Rate of Interest	Debt	Purpose	Debt
	\$'000		\$'000
No Interest .....	1,132	Light and power .....	460
Under 3 per cent .....	—	Water supply, sewerage and drainage (a).....	9,376
3 and under 3½ per cent .....	117	Roads, streets, bridges and foot- paths .....	22,151
3½ and under 4 per cent .....	193	Council properties .....	7,022
4 and under 4½ per cent .....	432	Parks, gardens and recreational reserves .....	3,240
4½ and under 5 per cent .....	2,376	Other (including not stated) ..	1,470
5 and under 5½ per cent (a) ....	15,813		
5½ and under 6 per cent .....	22,021		
6 per cent and over.....	233		
Not specified .....	1,402		
<b>Total debt .....</b>	<b>43,718</b>	<b>Total debt .....</b>	<b>43,718</b>

(a) Includes South-Western Suburbs Drainage Scheme.

From 1965-66 the tables include details relating to the South-Western Suburbs Drainage Scheme. Works connected with the scheme to provide effective floodwater drainage commenced in 1959-60 with all initial payments being made from the State Loan Fund. When actual expenditures reached \$2,000,000 an estimate was formed of the total anticipated costs of the scheme and the relevant local government authorities then became liable for progressive repayment (over fifty-three years) of half the anticipated total expenditure including interest. Indebtedness was allocated to councils in 1965-66 (\$2,159,000) and 1966-67 (\$210,000): liability of councils is subject to review when total costs become known.

**LOAN FUND PAYMENTS**

The following table shows the principal purposes for which loan funds were expended during recent years.

**Local Government Authorities: Loan Fund Payments, South Australia**

Particulars	1962-63	1963-64	1964-65	1965-66	1966-67
			\$'000		
Water supply, sewerage and drainage	} 4,259	4,277	3,601	425	1,048
Roads, streets, bridges and footpaths				3,737	5,560
Council properties .....				1,275	2,081
Parks, gardens and recreational reserves .....				592	602
Other (a).....				201	325
<b>Total .....</b>	<b>5,521</b>	<b>5,564</b>	<b>6,043</b>	<b>6,230</b>	<b>9,616</b>

(a) Includes business undertakings, redemptions and advances.

## PART 13

# PRIVATE FINANCE

### 13.1 BANKING AND CURRENCY

#### BANKING

The banking system in Australia comprises a central bank (the Reserve Bank of Australia); fifteen cheque-paying banks (one owned by the Commonwealth, three by State Governments, and eleven privately owned); the Commonwealth Development Bank and the Australian Resources Development Bank Ltd. (specialist banks, owned respectively by the Commonwealth Government and a consortium of eight major cheque-paying banks); and thirteen savings banks of which one is owned by the Commonwealth and three by State Governments, two are trustee savings banks, and seven are associated with privately owned cheque-paying banks.

#### LEGISLATION

Under Section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to 'Banking, other than State banking; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money'.

The principal Commonwealth Acts at present in force relating to banking are:

- (a) The *Reserve Bank Act* 1959-1966, providing for the constitution and management of the Reserve Bank and the management of the Australian note issue;
- (b) The *Commonwealth Banks Act* 1959-1968, providing for the constitution and management of the Commonwealth Banking Corporation; and
- (c) The *Banking Act* 1959-1967, providing for the regulation of banking and the protection of the currency and public credit of Australia.

The *Banking Act* 1959-1967, which replaced the *Banking Act* 1945-1953, applies to all banks operating in Australia or its Territories, except State banks trading in their own State. The objects of the Act are (1) to provide a uniform legal framework for regulating the banking system (2) to safeguard depositors from loss (3) to provide for the co-ordination of banking policy under the direction of the Reserve Bank (4) to control the volume of credit in circulation and bank interest rates (5) to mobilise and to provide machinery for the control of foreign exchange and gold reserves of the Australian economy.

State banking legislation relates to the incorporation of banks and the constitution and management of State Banks. South Australian Acts at present in force relating to banking are:

The State Bank Act, 1925-1968 and

The Savings Bank of South Australia Act, 1929-1965.

### THE RESERVE BANK

The Reserve Bank of Australia functions as a Central Bank, controls the Australian note issue through the Note Issue Department, provides special banking facilities through the Rural Credits Department, and acts as banker to the Governments of the Commonwealth and some of the States.

Liabilities and assets of each department of the Reserve Bank are shown in the table below.

#### Reserve Bank of Australia, Liabilities and Assets

At 30 June 1968

Particulars	Central Bank Department	Note Issue Department	Rural Credits Department	Total (a)
<b>LIABILITIES (\$'000)</b>				
Capital .....	40,000	—	9,428	49,428
Reserve funds .....	20,119	—	7,318	27,436
Development fund .....	—	—	803	803
Notes on issue .....	—	998,500	—	998,500
Deposits, bills payable and other:				
Statutory reserve deposits ...	456,379	—	—	456,379
Other trading bank deposits ..	117,895	—	—	117,895
Savings bank deposits .....	495,760	—	—	495,760
Other .....	327,640	20,320	212,041	(a) 316,006
<b>Total .....</b>	<b>1,457,792</b>	<b>1,018,820</b>	<b>229,589</b>	<b>(a) 2,462,207</b>
<b>ASSETS (\$'000)</b>				
Gold and balances held abroad ..	349,304	315,474	—	664,778
Other overseas securities .....	182,045	151,425	—	333,470
Australian Government securities	536,239	500,983	—	1,037,222
All other .....	390,204	50,938	229,589	(a) 426,737
<b>Total .....</b>	<b>1,457,792</b>	<b>1,018,820</b>	<b>229,589</b>	<b>(a) 2,462,207</b>

(a) Inter-department accounts have been offset in totals.

Further details of the activities of the Reserve Bank are given in the *Official Year Book of the Commonwealth of Australia*.

### THE COMMONWEALTH BANKING CORPORATION

The Commonwealth Banking Corporation was established under the *Commonwealth Banks Act* 1959 and came into being on 14 January 1960. It is the controlling body for the Commonwealth Trading Bank, the Commonwealth Savings Bank and the Commonwealth Development Bank.

Particulars relating to the Development Bank are given below, while details of the other two banks are included in later sections relating to cheque-paying banks and savings banks.

### COMMONWEALTH DEVELOPMENT BANK

The Development Bank is a supplementary source of finance for development and does not compete with conventional lenders, but provides financial help when such help is thought desirable, and finance is not otherwise available on suitable terms. The primary consideration of the bank's operations in deciding whether finance should be made available is the prospects of success and not necessarily the value of security available. In South Australia all the major private banks and the State Bank of South Australia are agents of the Development Bank for the receipt of loan applications.

The capital of the Development Bank consists of the capital of the Mortgage Bank and Industrial Finance Department of the Commonwealth Bank immediately prior to 14 January 1960, \$10 million provided by the Reserve Bank, \$30 million provided by the Commonwealth Government in the 1961-62 and 1963-64 Budgets, and such other sums as are provided by the Commonwealth Development Bank Reserve Fund. The net profits of the bank are paid to this reserve fund.

### AUSTRALIAN RESOURCES DEVELOPMENT BANK LIMITED

This corporation was formed by the eight major cheque-paying banks with the support of the Reserve Bank and was given bank status by an amendment to the Banking Act in 1967. Its function is to provide finance for major developmental projects. Such finance is provided from funds drawn from the member-banks and by borrowing both in Australia and overseas.

Authorised capital of the bank is \$10 million of which \$3 million has been issued as fully paid capital with the eight banks each subscribing an equal share. Although not a shareholder, the Reserve Bank of Australia initially subscribed \$2 million in loan capital on which a fixed rate of interest, related to market rates, is paid.

### CHEQUE-PAYING BANKS

For statistical purposes cheque-paying banks are often divided into two groups, 'major' and 'other'. 'Major cheque-paying banks' comprise the seven major private trading banks and the Commonwealth Trading Bank, all of which have interests throughout Australia: together they transact more than 90 per cent of all general trading bank business in Australia. The group 'other cheque-paying banks' consists of the three State Government banks (including the State Bank of South Australia) which trade mainly in their respective States, and four other banks (three of them overseas institutions) whose business is either specialised, e.g. financing overseas trade, or both specialised and limited to particular areas.



**Banks Originating in South Australia**

With a subscribed capital of \$500,000 in 50,000 shares of \$10 each, the first cheque-paying bank promoted in South Australia was the Bank of Adelaide which was incorporated by an Act of Parliament and assented to on 5 December 1865. The bank formally opened for business on 11 December of the same year. The Bank of Adelaide now has branches in all mainland States.

Pursuant to the State Advances Act of 1895 the State Bank of South Australia was constituted and commenced business in 1896. The original Act directed that advances were to be made on first mortgage to farmers, other primary producers and local government authorities. In 1925 legislation was enacted which enlarged the scope of the activities of the bank by making provision for loans on overdraft and all business of general banking. The State Bank also administers the under-mentioned Acts on behalf of the State:

Advances for Homes Act, 1928-1968.

Advances to Settlers Act, 1930-1968.

Loans to Producers Act, 1927-1962.

Advances for wire-netting and vermin proof materials under the Vermin Act, 1931-1967.

Loans for Fencing and Water Piping Act, 1938-1952.

Student Hostels (Advances) Act, 1961.

The State Bank of South Australia does not operate branches or agencies outside the State.

**Assets**

The following table gives some particulars of assets held by cheque-paying banks in Australia. The figures quoted are averages of assets at the close of business on each Wednesday in June 1968.

**Cheque-Paying Banks in Australia: Assets, June 1968**

*Excludes Inter-branch Accounts and Contingencies*

Assets	Common-wealth Trading Bank	Private Banks	Other Cheque-paying Banks	Total
	\$'000			
Gold, bullion and Australian notes	29,622	117,241	7,250	154,113
Cash with Reserve Bank .....	620	2,966	3,731	7,318
Australian public securities:				
Commonwealth and State ....	265,683	831,144	119,128	1,215,954
Local and semi-governmental authorities .....	15,119	807	4,666	20,591
Statutory Reserve Deposit Account with Reserve Bank .....	88,959	367,542	1,274	457,774
Loans to authorised dealers in short term money market .....	14,081	59,908	13,750	87,738
Other loans, advances and bills discounted .....	648,728	2,948,946	422,404	4,020,078
Bank premises, furniture and sites..	12,430	120,391	20,780	153,601
Other assets .....	48,265	351,968	26,457	426,688
<b>Total assets .....</b>	<b>1,123,505</b>	<b>4,800,911</b>	<b>619,440</b>	<b>6,543,855</b>

**Branches and Agencies**

Of the fifteen cheque-paying banks which operate in Australia, the nine banks listed below conduct business in South Australia:

**Government banks:**

Commonwealth Trading Bank

State Bank of South Australia

**Private banks:**

Australia and New Zealand Bank Ltd

Bank of Adelaide

Bank of New South Wales

Commercial Bank of Australia Ltd

Commercial Banking Co. of Sydney Ltd

English, Scottish and Australian Bank Ltd

National Bank of Australasia Ltd

At 30 June 1968 there were 437 branches and 317 agencies in South Australia, compared with Australian totals of 4,670 branches and 1,624 agencies.

The following table shows that the considerable increase in the number of branches during recent years has been predominantly in areas regarded by the banks as being metropolitan.

**Cheque-Paying Bank Branches and Agencies, South Australia**

*At 30 June*

Bank	Branches					Agencies
	1964	1965	1966	1967	1968	1968
Commonwealth Trading Bank ..	37	42	45	45	45	36
State Bank of South Australia ...	35	35	35	35	35	15
Private banks .....	331	344	353	357	357	266
Total—Metropolitan area (a)	180	189	203	208	210	147
Country .....	223	232	230	229	227	170
Total State .....	403	421	433	437	437	317

(a) As determined by individual banks for administrative purposes.

**Deposits and Advances**

Deposits not bearing interest are on current account and may be withdrawn on demand. Deposits bearing interest include some deposits on current account, but most are deposits for fixed terms—often for 3, 12, 18 or 24 months. The minimum term for fixed deposits was reduced from 3 months to 30 days for large amounts in 1964.

Deposits not bearing interest, as a proportion of total deposits, reached a low point of less than 24 per cent in 1933 and rose to a peak of more than 74 per cent in 1953, from which time there has been a relative decline to the 50.4 per cent shown for 1968.

Advances exceeded deposits in two years during the 1930s but conditions during and immediately following the 1939-45 War were such that advances declined from an earlier average of approximately 70 per cent of deposits to only 29 per cent in 1949. Since then the proportion has risen fairly steadily to 86.5 per cent in 1968 when the advances of \$340 million were more than eight times the 1949 figure.

**Cheque-Paying Banks: Average Weekly Deposits and Advances, South Australia**  
*June Quarter 1964 to 1968*

June Quarter	Deposits			Loans, Advances, Etc. (a)	Proportion to Total Deposits	
	Bearing Interest	Not Bearing Interest	Total		Deposits Not Bearing Interest	Loans, Advances, Etc. (a)
	\$'000	\$'000	\$'000	\$'000	%	%
1964....	137,120	191,365	328,485	199,816	58.3	60.8
1965....	162,021	190,391	352,411	239,123	54.0	67.9
1966....	175,058	196,305	371,362	271,132	52.9	73.0
1967....	178,949	199,454	378,401	292,328	52.7	77.3
1968....	194,901	198,276	393,175	340,117	50.4	86.5

(a) Excludes loans to authorised dealers in the short-term money market. Includes bills discounted.

Separate details for 1968 for each of the Government banks and for all private banks are as follows:

**Cheque-Paying Banks: Deposits and Advances, South Australia**  
*June Quarter 1968*

Bank	Deposits			Loans, Advances, Etc. (a)
	Bearing Interest	Not Bearing Interest	Total	
	\$'000			
Commonwealth Trading Bank ....	23,155	22,364	45,519	41,145
State Bank of South Australia .....	22,505	20,781	43,286	115,961
Private trading banks .....	149,240	155,130	304,370	183,011
Total .....	194,901	198,276	393,175	340,117

(a) Excludes loans to authorised dealers in the short-term money market. Includes bills discounted.

The following table relates to cheque-paying bank advances outstanding for all banks in South Australia and the Northern Territory except the State Bank of South Australia. Advances are classified according to type of borrower in July of each year from 1964 to 1968.

Major Cheque-paying Banks<sup>(a)</sup>, South Australia and Northern TerritoryAdvances to Resident Borrowers<sup>(b)</sup> by Type of Borrower

At Second Wednesday in July

Classification	1964	1965	1966	1967	1968
	\$m				
Business advances:					
Agriculture, grazing and dairying;					
Mainly sheep grazing .....	17.8	19.8	20.1	22.7	28.2
Mainly wheat growing .....	8.5	10.3	13.8	16.6	24.2
Mainly dairying and pig raising .....	3.7	3.8	4.8	4.5	5.5
Other .....	10.3	11.9	13.4	16.0	21.0
Total agriculture, etc. ....	40.4	45.8	(c) 52.0	(c) 59.8	(c) 79.0
Manufacturing .....	19.0	29.2	34.4	30.8	31.8
Transport, storage and communication	2.4	2.8	3.4	5.0	3.5
Finance;					
Building and housing societies .....	0.2	0.6	0.8	0.8	0.9
Pastoral finance companies .....	1.7	1.1	6.4	2.3	3.9
Hire-purchase and other finance companies .....	2.7	2.6	2.3	1.9	2.2
Other .....	2.1	1.6	1.5	2.4	2.5
Total finance .....	6.7	5.9	11.1	7.4	9.4
Commerce;					
Retail trade .....	16.2	17.2	19.4	19.5	24.5
Wholesale trade (d) .....	17.7	21.9	21.1	18.9	16.2
Total commerce .....	33.8	39.0	40.5	38.4	40.7
Building and construction .....	4.7	4.6	4.9	6.2	6.7
Other business .....	11.2	12.1	13.7	17.3	20.5
Unclassified .....	4.3	3.3	2.5	2.6	2.5
Total business advances ....	122.6	142.8	162.4	167.6	194.1
Distribution of business advances:					
To companies .....	67.1	82.2	90.4	90.3	95.0
Other .....	55.5	60.6	72.0	77.3	99.1
Advances to public authorities .....	0.4	0.7	0.8	1.0	0.7
Personal advances:					
Building or purchasing own home .....	11.5	12.8	13.5	15.4	16.0
Other .....	11.6	12.7	14.1	17.1	20.5
Total personal advances ....	23.1	25.4	27.6	32.5	36.5
Advances to non-profit organisations ....	2.0	1.9	2.4	2.7	3.2
Total advances to resident borrowers	148.1	170.9	193.2	203.8	234.5

(a) Covers advances by the Commonwealth Trading Bank and all private cheque-paying banks, but excludes advances by the State Bank of South Australia.

(b) 'Resident borrowers' include institutions carrying on business, and individuals permanently residing in Australia or Papua-New Guinea.

(c) Includes farm development loan component.

(d) Includes temporary advances to woolbuyers.

**Interest Rates**

The following table sets out interest rates on fixed deposits and maximum interest rates on overdrafts applying in South Australia at 30 June each year from 1964 to 1968.

**Cheque-paying Banks: Interest Rates, South Australia**

At 30 June	Fixed Deposits					Overdrafts (Maximum Rate)
	30 days, less than 3 months (a)	3 months, less than 12 months	12 months to 15 months	12 months to 18 months	Over 18 months, up to 24 months	
	Per Cent per Annum					
1964....	3½	3½	4	(b)	(b)	7
1965....	4½	4½	(b)	4½	4½	7½
1966....	4½	4½	(b)	4½	4½	7½
1967....	4	4	(b)	4½	4½	7½
1968....	4½	4½	(b)	4½	4½	7½

(a) On deposits of \$100,000 or more only.

(b) Not applicable.

**Debits to Customers' Accounts**

Debits to customers' accounts generally represent the total of all cheques drawn by customers of the banks. The average weekly debits to customers' accounts of all cheque-paying banks, including the Rural Credits Department of the Reserve Bank and the Commonwealth Development Bank, in South Australia in recent years were as follows:

	\$'000
1963-64 .....	155,192
1964-65 .....	170,486
1965-66 .....	172,877
1966-67 .....	184,523
1967-68 .....	201,841

These figures are the averages of debits during weeks ending on Wednesdays.

**SAVINGS BANKS****Savings Bank of South Australia**

The Savings Bank of South Australia commenced operations on 11 March 1848 following the enactment of an ordinance in 1847. In 1848 the bank had 214 depositors, with depositors' funds amounting to \$10,626. At 30 June 1968 there were 133 branches and 804 agencies in South Australia and in addition there were 807 school bank agencies. The Savings Bank of South Australia does not operate branches in other Australian States although it has appointed agents to act for it in other States and in the United Kingdom.

The total value of depositors' balances first exceeded \$200 million in 1956, and has subsequently increased rapidly to exceed \$377 million by 1968. At 30 June 1968, mortgage loans outstanding exceeded \$151 million following mortgage lending of over \$20 million in 1967-68 which was predominantly

to depositors for building or purchasing homes (\$16,677,134) but included also \$2,441,646 for purchase or development of rural properties.

### Savings Bank of South Australia, Summary of Business

Year	Operative Accounts (a)	Cash Turn- over (b)	Depositors Balances (a)	Mortgage Loans (a)	Government Securities Held (a)
	No.	\$m	\$'000	\$'000	\$'000
1963-64 .....	858,072	537	304,271	96,935	184,178
1964-65 .....	870,983	630	322,841	110,704	195,315
1965-66 .....	884,250	686	343,062	125,833	199,467
1966-67 .....	894,454	728	362,190	139,703	204,875
1967-68 .....	902,270	777	377,523	151,291	210,674

(a) At end of year, as published in the Bank's Annual Report.

(b) Sum of deposits and withdrawals; includes some duplication from amounts transferred by depositors from one type of account to another.

### Development of Savings Banks

Post offices in South Australia acted as agencies for the Savings Bank of South Australia until the establishment of the Commonwealth Bank in 1912 when they switched to act as agencies for this bank.

Savings bank business was conducted entirely by these two government banks until 1956, when the first of the private banks entered the field. At present savings banking facilities in South Australia are provided by the nine banks listed below.

#### Government:

Commonwealth Savings Bank  
Savings Bank of South Australia

#### Private:

Australia and New Zealand Savings Bank Ltd  
Bank of Adelaide Savings Bank Ltd  
Bank of New South Wales Savings Bank Ltd  
Commercial Savings Bank of Australia Ltd  
Commercial Banking Co. Savings Bank Ltd  
English, Scottish and Australian Savings Bank Ltd  
National Bank Savings Bank Ltd

The prime object of the foundation of savings banks in Australia was the encouragement of thrift, and deposits as small as ten cents are still accepted. Generally, depositors cannot operate on their savings accounts by means of cheques, although most savings banks extend this facility to non-profit organisations such as friendly, co-operative and charitable societies, and in addition the Savings Bank of South Australia provides similar facilities for other depositors. Savings bank accounts have the advantages that deposits may be withdrawn on

demand and that depositors receive interest on their minimum monthly balances. No charge is made by the banks for keeping the accounts.

### Assets

Under the provisions of the *Banking Act* 1959-1967 all savings banks, except State banks, which are subject to the Act are required to maintain in prescribed investments an amount that together with cash on hand in Australia is not less than the amount on deposit in Australia with the savings bank. These prescribed investments include deposits with the Reserve Bank, deposits with or loans to other banks, Commonwealth or State securities, loans for housing and loans to authorised dealers in the short-term money market.

A savings bank must hold at least 65 per cent of depositors' funds in cash or approved securities.

Under the Act, a savings bank may not accept deposits from a profit-making body unless it is acting as a trustee for a non-profit-making beneficiary.

Details of assets of all savings banks in Australia at 30 June 1968 are as follows:

#### Savings Bank: Assets in Australia, 30 June 1968

(Excludes inter-branch accounts)

Assets	Common-wealth Savings Bank	State Savings Banks	Trustee Savings Banks (a)	Private Savings Banks	Total
	\$'000				
Coin, bullion and Australian notes	5,096	8,458	429	2,019	16,002
Deposits with Reserve Bank . . . .	269,810	78,034	670	227,160	575,674
Deposits in Australia with trading banks . . . . .	38,520	89,855	6,233	29,787	164,395
Australian public securities:					
Commonwealth and States . . .	1,190,580	389,762	19,819	664,405	2,264,566
Local and semi-governmental authorities . . . . .	402,819	466,090	38,494	677,467	1,584,870
Loans, advances and bills discounted (b):					
Housing . . . . .	714,713	502,134	21,388	607,325	1,845,560
Other . . . . .	168,044	70,186	5,880	49,677	293,787
All other assets . . . . .	54,592	32,914	4,951	28,760	121,217
Total assets . . . . .	2,844,174	1,637,433	97,864	2,286,600	6,866,071

(a) Trustee banks do not operate in South Australia.

(b) Excludes loans to authorised dealers on the short-term money market.

### Branches and Agencies

The number of branches of both government and private banks has increased steadily during the last five years as shown in the following table. The sharp increase in the number of agencies during 1967-68 was mainly attributable to one bank.

**Savings Banks: Branches and Agencies, South Australia***At 30 June*

Bank	Branches					Agencies	
	1964	1965	1966	1967	1968	1967	1968
Commonwealth Savings Bank . . . .	64	65	68	70	74	902	899
Savings Bank of South Australia . .	121	123	126	130	133	788	802
Private Banks . . . . .	331	344	353	357	357	563	819
Total—Metropolitan area (a) .	248	257	273	289	296	1,246	1,426
Country . . . . .	268	275	274	268	268	1,007	1,094
Total State . . . . .	516	532	547	557	564	2,253	2,520

(a) As determined by individual banks for administrative purposes.

**Deposits**

Until 1961, the total of depositors' balances in savings banks per head of population was higher in South Australia than in any other State. Although deposits per head are now higher in Victoria than in South Australia, the figure for this State is still well above the Australian average.

**Savings Banks: Accounts and Deposits, South Australia and Australia**

At 30 June	South Australia			Australia		
	Accounts Operative (a)	Deposits	Deposits per Head of Population	Accounts Operative (a)	Deposits	Deposits per Head of Population
	'000	\$m	\$	'000	\$m	\$
1964 . . . .	1,182	475.8	458	11,051	4,476.2	401
1965 . . . .	1,254	519.3	486	11,769	4,886.6	429
1966 . . . .	1,319	558.9	510	12,469	5,253.7	453
1967 . . . .	1,371	605.2	544	13,133	5,764.7	488
1968 . . . .	1,418	643.7	572	13,823	6,221.5	517

(a) Excludes school bank and inoperative accounts.

The Savings Bank of South Australia has always held a very high proportion of the total of depositors' balances in this State, although its share of total on deposit has dropped from about 75 per cent in 1961 to 59 per cent in 1968. In that time the private banks have increased their share from less than 12 per cent to over 19 per cent.

**Savings Bank Deposits, South Australia**

At 30 June	Commonwealth Savings Bank	Savings Bank of South Australia	Private Savings Banks	Total
	\$m			
1964 . . . . .	105.7	304.3	65.8	475.8
1965 . . . . .	115.5	322.8	80.9	519.3
1966 . . . . .	122.6	343.1	93.2	558.9
1967 . . . . .	132.8	362.2	110.1	605.2
1968 . . . . .	142.2	377.5	123.9	643.7



The next table gives an indication of the amount of business conducted by savings banks during a year. It shows that in each of the last five years, both the amount deposited and the amount withdrawn during the year exceeded the total amount on deposit at the end of the year.

#### Movements in Savings Bank Deposits, South Australia

Year	Amount on Deposit at Beginning of Year	Deposits during Year (a)	Withdrawals during Year (a)	Interest Added during Year	Increase in Depositors' Balances during Year	Amount on Deposit at End of Year
				\$m		
1963-64	416.1	579.6	532.7	12.7	59.7	475.8
1964-65	475.8	671.4	643.3	15.3	43.4	519.3
1965-66	519.3	721.5	699.1	17.2	39.7	558.9
1966-67	558.9	784.7	757.4	19.0	46.3	605.2
1967-68	605.2	841.9	825.0	21.6	38.5	643.7

(a) Includes inter-branch transfers.

#### Interest Rates

On 1 August 1968 the interest rate on ordinary accounts with most banks was increased from 3½ per cent to 3¾ per cent on balances up to \$10,000. No interest is payable on ordinary account balances in excess of this amount. For special society cheque accounts lower rates applied to balances in excess of \$6,000. Interest is calculated on the lowest balance in the account each month.

#### School Banking

Special banking facilities for school children were introduced to South Australia with the inauguration of the School Banking Department of the Savings Bank of South Australia on 28 April 1908. For many years this bank was the only one engaged in this field, but in recent years the Commonwealth Savings Bank and some private banks have commenced similar services at some private schools. However, the Savings Bank of South Australia has sole access to State schools, and retains a major share of school banking business.

With a view to encouraging thrift in school children, deposits as small as one cent are accepted.

Details of school banking in this State are as follows:

	Agencies	Operative Accounts '000	Depositors' Balances \$'000
30 June 1964	877	173	3,410
1965	883	179	3,607
1966	883	181	3,775
1967	869	186	3,941
1968	859	189	4,127

## CURRENCY

Under the Commonwealth Constitution, the control of currency, coinage, and legal tender in Australia is vested in the Commonwealth.

The Commonwealth Treasurer is empowered by legislation to arrange for the making and issuing of coins of specified denominations. Australia's coin requirements are met by the Royal Australian Mint in Canberra. Australian notes are printed by the Note Printing Branch of the Reserve Bank in Melbourne, while their issue is controlled by the Note Issue Department of that Bank.

### Decimal Currency

Until 13 February 1966 Australian currency was based on the British unit which is the pound (£), divided into 20 shillings (s) each of 12 pence (d). A decimal currency system was introduced on 14 February 1966 with the major unit, the dollar, equal to ten shillings and the minor unit, the cent equal to 1.2 pence in the old currency. From 14 February 1966 decimal currency became legal tender and all cheques and other bills of exchange and all promissory notes had to be executed in dollars and cents. During a transitional period ending on 31 July 1967 both currencies were legal tender, and contracts and other monetary transactions might be arranged in terms of either £.s.d. or \$ c. Since 1 August 1967 all contracts, etc. have to be made out in terms of \$ c; threepences, pennies and halfpennies are legal tender only in multiples of sixpence; but all £.s.d. notes, and coins from sixpence upward, continue to be legal tender on the same basis as decimal notes and coins.

At June 1968 decimal currency notes in circulation were of the denominations \$1, \$2, \$5, \$10 and \$20. Coins in circulation were 1 cent and 2 cents (bronze), 5, 10 and 20 cents (cupro-nickel), and 50 cents (silver).

There will be no further minting or issue of the 50 cent coin in its original form of 80 per cent silver and 20 per cent copper. A twelve sided version of the 50 cent coin, in cupro-nickel, will be issued during 1969. A special 50 cent coin will be issued in 1970 to commemorate the two-hundredth anniversary of Captain James Cook's discovery of the east coast of Australia.

More complete details of Australian currency, including historical references, are given in pages 552-6 of the *South Australian Year Book* 1968.

## 13.2 INSURANCE

### LIFE INSURANCE

The activities of life insurance companies operating in South Australia have been regulated by Commonwealth legislation since 1945. Under the *Life Insurance Act* 1945-1965, every company transacting life insurance business must be registered and must lodge a deposit of up to \$100,000, as security for policy holders, with the Commonwealth Treasurer. The Act is administered by the Insurance Commissioner who has wide powers of inquiry into the activities of any registered company.

Each company must establish at least one statutory fund and all moneys received in respect of life insurance business must be paid to, and form part of the assets of these funds. An actuarial investigation must be conducted at least

once every five years, with the distribution of shareholders dividends and policyholders bonuses subject to sufficient surplus being revealed by such investigation. All premiums must be actuarially approved and the Commissioner has powers to suppress policies or proposals which he deems misleading.

Companies are required to furnish to the Commissioner certain accounting reports and statistical returns and it is from these returns that the statistical details in this section are obtained. The individual returns cover operations for the accounting year ending in the calendar year shown. For a majority of companies the closing date is 31 December, but a number balance earlier in the year.

During 1967 there were thirty-five companies operating in South Australia. All conducted ordinary life insurance business; twenty-eight also undertook superannuation business, *i.e.* the issuing of policies to the trustees of funds established for the provision of superannuation or retirement benefits, and eleven recorded industrial businesses whereby premiums are collected at intervals of less than two months.

### Policies in Force

There has been a rapid growth in life insurance business in the post-war years. For policies in force at the end of 1945, the sum assured plus bonus additions amounted to \$130 million; by 1949 the figure had passed \$200 million and the \$500 million mark was reached in 1956. By the end of 1967 the figure exceeded \$1,780 million.

The following table illustrates the growth in life insurance business over the last ten years. Although total business has been increasing, the number of industrial policies has actually declined and industrial premiums have risen only slowly. The heavy relative decline in this form of business has been due to the high cost of collecting premiums and to the development of superannuation and group schemes.

**Life Insurance: Policies in Force, South Australia**

31 December	Ordinary (including Superannuation)				Industrial			
	Policies	Sum Assured	Bonus Additions	Annual Premiums	Policies	Sum Assured	Bonus Additions	Annual Premiums
	No.	\$'000	\$'000	\$'000	No.	\$'000	\$'000	\$'000
1958.....	341,088	534,616	41,820	18,065	378,679	65,107	2,312	3,065
1959.....	(a) 389,071	605,433	48,090	19,868	369,621	65,986	2,575	3,077
1960.....	408,183	689,338	55,695	22,048	357,065	67,243	2,860	3,102
1961.....	424,267	773,307	63,418	24,075	340,649	68,255	3,077	3,111
1962.....	438,417	866,881	74,941	26,330	326,302	70,754	3,485	3,173
1963.....	449,824	961,053	87,634	28,628	312,496	73,418	4,062	3,238
1964.....	467,065	1,083,941	102,045	31,705	299,721	77,968	4,714	3,378
1965.....	486,237	1,212,109	117,815	34,933	288,863	82,268	5,410	3,523
1966.....	503,001	1,353,568	137,001	38,306	275,731	85,430	6,115	3,612
1967.....	522,996	1,528,304	156,013	42,330	269,137	89,721	7,027	3,758

(a) Some 'Voluntary Group' policies, previously counted as one policy, were converted to single policies for each person insured.

Details of policies in force at the end of 1967 are presented in the following table according to the type of policy and the nature of the business. The distinction between endowment insurance and endowment policy is that endowment insurance provides for the payment of the sum assured upon the insured reaching a specified age or upon his prior death, whereas the sum assured under an endowment policy is paid only upon the insured reaching the specified age.

**Life Insurance: Policies in Force, South Australia, at end of 1967**

Type of Policy	Ordinary		Superannuation		Industrial	
	Sum Assured	Annual Premiums	Sum Assured	Annual Premiums	Sum Assured	Annual Premiums
	\$'000					
Whole life insurances	650,703	13,874	22,029	604	6,454	307
Endowment insurances	393,591	16,954	171,930	6,742	81,561	3,352
Other insurances .....	211,543	1,328	55,728	1,323	—	13
Endowment .....	16,322	1,227	6,457	278	1,705	87
<b>Total .....</b>	<b>1,272,160</b>	<b>33,383</b>	<b>256,144</b>	<b>8,947</b>	<b>89,721</b>	<b>3,758</b>

Of the thirty-five companies undertaking ordinary business in 1967, ten accounted for 89 per cent of business registered at the end of the year, with the five largest accounting for 72 per cent. Although twenty-eight companies had superannuation policies registered, ten companies accounted for 99 per cent, and three for 76 per cent of all superannuation business.

**New Policies**

During 1967 a total of 66,979 new life insurance policies, with an assured value of \$279,996,000, were issued in South Australia. This number exceeded the previous highest figure of 63,872 policies issued in 1966. The value, *i.e.* amount assured, of new policies has increased continuously since 1945.

The number and value of new ordinary, superannuation, and industrial policies issued during the last five years is shown in the next table. The relative importance of industrial policies has declined from approximately 25 per cent of total value in 1945 to less than 5 per cent in 1967. The average value of industrial policies is much lower than for ordinary and superannuation policies.

**Life Insurance: New Policies Issued, South Australia**

Policy	1963	1964	1965	1966	1967
	NUMBER ISSUED				
Ordinary .....	39,385	42,262	43,521	44,725	48,018
Superannuation .....	4,693	5,236	5,583	5,988	5,758
Industrial .....	13,444	13,192	14,138	13,159	13,203
<b>Total .....</b>	<b>57,522</b>	<b>60,690</b>	<b>63,242</b>	<b>63,872</b>	<b>66,979</b>
	SUM ASSURED (\$'000)				
Ordinary .....	130,504	152,460	167,043	181,894	205,056
Superannuation .....	25,504	34,553	37,648	46,336	63,117
Industrial .....	9,175	10,777	11,254	11,021	11,823
<b>Total .....</b>	<b>165,183</b>	<b>197,790</b>	<b>215,946</b>	<b>239,250</b>	<b>279,996</b>

Annual premiums on new policies issued in 1967 amounted to \$7,157,000 and of this amount \$3,681,000 was for endowment insurances and \$2,250,000 for whole of life insurances. Details of sum assured and premiums payable for the various types of policy issued in 1967 are shown in the following table.

**Life Insurance: New Business, South Australia, 1967**

Type of Policy	Ordinary		Superannuation		Industrial	
	Sum Assured	Annual Premiums	Sum Assured	Annual Premiums	Sum Assured	Annual Premiums
	\$'000					
Whole life insurances	109,289	2,113	3,597	99	742	37
Endowment insurances	43,038	2,141	29,484	1,104	11,081	436
Other insurances .....	49,434	285	28,223	582	—	4
Endowment .....	3,296	292	1,812	65	—	—
Total .....	205,056	4,831	63,117	1,850	11,823	477

**Life Insurance Policies Discontinued**

The following table gives details of policies discontinued according to reason for discontinuance. The item 'transfer' represents the net balance from the transfer of policies between the South Australian register and those of other States. Alterations to existing policies which result in policies being replaced, sometimes by an increased number of policies, are included in 'other'.

**Life Insurance: Policies Discontinued or Reduced, South Australia, 1967**

Reason for Discontinuance	Ordinary		Superannuation		Industrial	
	Policies	Sum Assured	Policies	Sum Assured	Policies	Sum Assured
	No.	\$'000	No.	\$'000	No.	\$'000
Death .....	1,999	3,436	238	706	1,214	231
Maturity .....	7,477	5,094	721	1,171	8,425	1,067
Surrender .....	11,077	28,299	2,597	12,542	6,717	2,763
Forfeiture .....	6,790	27,279	117	823	3,143	3,326
Transfer .....	1,485	4,486	780	1,281	41	100
Other .....	—351	4,953	851	3,367	257	46
Total .....	28,477	73,546	5,304	19,891	19,797	7,533

**Annuity Business**

Life insurance companies also issue annuity policies but this form of business is at present a relatively minor aspect of life insurance activity. At the end of 1967 there were 230 annuities in force with a total sum assured of \$173,000 per annum.

**Premiums and Claims**

Details of premium income and of cash payments made in respect of policies are shown in the following table. This table does not show investment income or management and commission expenses and accordingly is not a revenue and expenditure table.

**Life Insurance: Premiums and Policy Payments, South Australia**

Year	Premiums and Considerations for Annuities	Payments					
		Death or Disability	Maturity	Surrenders	Annuities	Cash Bonuses	Total
				\$'000			
1964.....	34,916	4,558	7,086	4,094	69	53	15,859
1965.....	38,226	4,790	7,480	4,479	62	63	16,874
1966.....	41,817	5,138	8,620	5,207	61	88	19,114
1967.....	45,863	5,633	9,140	5,916	67	91	20,847

**Loans Outstanding**

A considerable proportion of the assets of life insurance companies is held as loans, particularly loans on the mortgage of real estate. In the following table details are given of mortgages on South Australian real estate, loans on policies registered in, and 'other' loans to persons resident in this State. Only those loans which form assets of the statutory funds, are included.

**Life Insurance: Loans Outstanding, South Australia**

Nature of Collateral	1964	1965	1966	1967
	\$'000			
Mortgage of real estate .....	62,492	64,220	69,252	69,479
Policies :				
Advances of premiums.....	1,770	2,039	2,306	3,965
Other .....	9,041	9,957	11,004	12,166
Other collateral .....	207	272	255	256
Total .....	73,509	76,487	82,817	85,865

**GENERAL INSURANCE**

General insurance in South Australia is conducted largely by private organisations. Some government insurance, in particular workmen's compensation, is carried by the State Government's Accident Insurance Office and in addition the State Bank of South Australia insures certain properties on which it has provided mortgage finance. A number of Commonwealth Government instrumentalities also are engaged in insurance in South Australia, notably in respect of housing loans and export payments, but these Commonwealth activities are not included in South Australian statistics.

Under the Commonwealth *Insurance Act* 1932-1966, insurance companies are required to lodge a deposit with the Commonwealth Treasurer, as security against liability to policy holders. The Act does not apply to State insurance within the limits of the State concerned. However, insurance business is conducted almost entirely under State legislation. Companies, persons, or firms of persons carrying on general insurance business are required, under the Stamp Duties Act, 1923-1968, to take out an annual licence, such licence being the authority to carry on insurance business in the State. The licence fee varies with

premium income. Under the Fire Brigades Act, 1936-1958, insurance companies contribute approximately 60 per cent of the cost of maintaining the services of the Fire Brigades Board.

Insurance for workmen's compensation and motor vehicle third party risks is compulsory under State legislation. Employers, unless specifically exempted, are required under the Workmen's Compensation Act, 1932-1966 to effect an insurance cover providing compensation for workmen suffering injuries in the course of their employment. Details of workmen's compensation provisions are given in Part 7.4 pages 298-9. Under the Motor Vehicles Act, 1959-1968 all vehicles other than those belonging to the Crown must be covered by a third party policy protecting the owner against any liability for death or injury to others resulting from use of the vehicle. Particulars are given in Part 11.1 pages 512-3.

The statistics in this section are compiled from returns covering transactions of more than 170 companies licensed to conduct general insurance business and the Government Insurance Office and the State Bank. Each return gives details of the organisation's activities during a twelve month period ending within the year shown. Some re-insurance transactions are excluded from the returns to avoid duplication.

The following tables show some details of revenue and expenses relating to general insurance over the last five years. The tables contain selected items of statistics and should not be combined and construed as profit and loss statements or revenue accounts. The first table shows premiums and investment income earned by the companies. Premiums represent the full amount receivable in respect of policies issued and renewed in the year less returns, rebates, and bonuses, paid or credited to policy holders in the year. They are not adjusted to provide for premiums unearned at the end of the year and consequently the amounts shown differ from 'earned premium income' for the year. Premiums have increased over the period covered by the table and hence have been greater than earned premium income in each year. Investment income relates to interest, dividends, rents, etc. from investments made within the State.

#### General Insurance: Principal Items of Revenue, South Australia

Source of Revenue	1963-64	1964-65	1965-66	1966-67	1967-68
\$'000					
Premiums:					
Fire and sprinkler leakage ..	6,969	6,227	6,537	7,107	7,219
Householders' comprehensive	3,534	3,862	4,197	4,545	4,848
Loss of profits .....	615	697	764	772	805
Hailstone .....	302	314	253	363	170
Marine .....	1,567	1,485	1,366	1,600	1,734
Motor vehicle:					
Compulsory third party.	5,868	6,601	7,867	8,885	11,067
Other .....	12,157	13,970	15,336	16,433	16,878
Employers' liability and workmen's compensation .....	5,704	6,901	8,100	10,041	9,990
Personal accident .....	1,856	2,075	2,192	2,389	2,570
Public risk, third party .....	887	871	934	1,076	1,337
Burglary .....	393	427	475	577	694
Other .....	1,285	1,342	1,412	1,626	1,839
Total premiums ...	41,138	44,772	49,433	55,413	59,151
Revenue from investments .....	557	661	688	701	830
Total .....	41,695	45,433	50,121	56,114	59,981

Details of claims and other expenses are given below. Claims include provision for outstanding claims and represent claims incurred during the year. Other expenses mainly represent payments made during the year. Taxation payments are therefore based on income earned in previous years.

### General Insurance: Expenses, South Australia

Type of Expense	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Claims :					
Fire and sprinkler leakage ..	1,435	2,017	1,748	1,914	1,394
Householders' comprehensive	721	748	831	1,089	1,048
Loss of profits .....	10	168	146	250	224
Hailstone .....	21	123	209	250	56
Marine .....	629	672	583	846	1,051
Motor vehicle :					
Compulsory third party.	4,738	4,972	6,975	7,350	7,036
Other .....	7,800	9,434	9,921	9,800	9,832
Employers' liability and work-					
men's compensation .....	3,614	4,441	5,111	6,146	5,912
Personal accident .....	906	899	999	1,094	1,065
Public risk, third party .....	236	364	306	423	547
Burglary .....	192	227	284	349	355
Other .....	642	681	730	739	1,015
Total claims .....	20,943	24,745	27,843	30,250	29,536
Other expenses :					
Contributions to fire brigades	674	646	715	781	844
Commission and agents'					
charges .....	4,602	5,094	5,312	5,804	6,147
Management .....	7,695	8,432	9,298	10,513	11,520
Taxation .....	1,208	1,787	1,576	1,417	2,034
Total expenses .....	35,123	40,703	44,744	48,765	50,082

## 13.3 OTHER PRIVATE FINANCE

### THE STOCK EXCHANGE OF ADELAIDE

The Stock Exchange of Adelaide was formed in 1887 by the amalgamation of the Adelaide Stock Exchange and the Stock Exchange of South Australia. Basically the Exchange provides facilities for trading in securities, with transactions being conducted by brokers who constitute its membership. Trading was conducted on the call system until the end of 1961 when post trading came into operation.

The Exchange operates under a set of rules and regulations which govern both the behaviour of companies, through the various listing requirements, and the conduct of members. Management is by a president, vice-president and committee of four, all of whom are elected by the members.



Lists of quotations are issued by the Exchange twice daily and lists of dividends and new issues are produced weekly. The *Official Record* providing enlarged and additional information is published monthly. Transfer marking and noting services are available to members of the Exchange and to the public through solicitors and accountants. A visitors gallery overlooking the trading floor enables members of the public and organised parties to witness proceedings.

Figures in the following tables, provided by the Stock Exchange of Adelaide, show an exceptional increase in turnover of shares during 1967-68. This increase, stemming partly from overseas interest in Australian securities, affected the business of all stock exchanges in Australia. The increase was confined largely to oil and mining shares and in this respect it should be noted that several companies with diverse activities, including extensive oil and/or mining interests, are classified by stock exchanges as 'industrial' and are shown in that category in the tables.

### Stock Exchange of Adelaide, Turnover of Securities

Particulars	Year Ended 30 June				
	1964	1965	1966	1967	1968
	'000				
<b>Shares:</b>					
Industrial .....	13,930	11,369	10,562	10,814	17,136
Silver, lead and copper .....	996	917	621	977	1,498
Oil .....	3,509	2,977	1,745	2,144	12,010
Other mining .....	1,429	1,130	2,370	4,713	17,336
Total shares .....	19,864	16,393	15,298	18,649	47,981
	Market Value (\$'000)				
<b>Shares:</b>					
Industrial .....	21,912	18,300	15,426	13,439	28,417
Silver, lead and copper .....	2,387	2,944	1,819	4,784	9,869
Oil .....	4,576	2,973	1,249	996	8,153
Other mining .....	3,125	1,049	1,772	8,568	31,609
Total shares .....	31,999	25,265	20,266	27,787	78,048
	Face Value (\$'000)				
Commonwealth loans, semi-government loans, debentures and unsecured notes (a) .....	3,502	2,712	3,240	4,846	4,674

(a) Excludes occasional large 'off-market' placements of Commonwealth securities.

Seven companies with a combined nominal capital of \$23.6 million were added to the official list during 1967-68. The total value of new issues made by listed companies during the year was \$371.4 million. Seventeen companies were removed from the official list during the year due mainly to takeovers (ten) and company requests (five). Shown in the next table is the number of listed companies, and the number of issues and their nominal value.

## Stock Exchange of Adelaide, Official Listings

At 30 June

Year	Listed Companies	Listed Securities	
	Number	Number	Nominal Value
			\$'000
1964.....	455	1,981	10,262,000
1965.....	455	2,240	10,589,000
1966.....	444	1,992	11,073,000
1967.....	435	1,937	11,746,000
1968.....	425	2,226	11,696,501

## BUILDING SOCIETIES

The operations of building societies in South Australia are regulated by the Building Societies Act, 1881-1968 which is administered by the Registrar of Building Societies with whom all building societies must be registered. The societies fall into two categories—permanent societies and Starr-Bowkett societies.

Permanent societies, as their name implies, have no fixed arrangement for termination of operations. They derive their funds from the issue of shares and by receiving deposits and loans. An additional source of funds for certain permanent societies has been provided by the Commonwealth-State Housing Agreement (see page 355). Advances for the purpose of building or acquiring homes are made to members upon security of their shares, and to members and other persons by way of mortgage.

Starr-Bowkett societies have a limited life and derive their funds from regular subscription from members. These funds are used to make interest-free advances to members, with priority being determined by ballot. When all members have received a loan the process of winding up commences with share capital being returned to members as loans are repaid.

On 6 March 1969, a proclamation was issued by the Executive Council granting trustee status to the two largest permanent building societies in South Australia. This means that these two societies are approved organisations in which the trustee of an estate may legally invest funds entrusted to him.

## Building Societies: Societies, Shareholders and Borrowers, South Australia

Year	Societies		Shareholders		Borrowers	
	Permanent	Starr-Bowkett	Permanent	Starr-Bowkett	Permanent	Starr-Bowkett
1963-64	5	21	15,993	6,355	3,585	2,427
1964-65	5	21	16,561	6,185	3,870	2,590
1965-66	5	21	17,744	5,867	4,094	2,493
1966-67	5	21	17,836	5,886	4,347	2,385
1967-68	6	21	16,647	5,811	4,705	2,236

Details of assets and liabilities of these societies, given in the following table, are compiled from individual returns with a variety of balancing dates. The figures for each year represent the aggregate of returns with balancing dates in that year.

### Building Societies: Assets and Liabilities, South Australia

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
\$'000					
<b>Assets :</b>					
Advances on mortgages and shares .....	13,967	15,790	17,239	19,470	22,388
Land and buildings .....	332	334	412	407	430
Other investments .....	320	396	448	487	792
Cash and deposits .....	355	241	166	268	301
Other .....	32	41	52	39	37
<b>Total assets .....</b>	<b>15,005</b>	<b>16,801</b>	<b>18,317</b>	<b>20,671</b>	<b>23,947</b>
<b>Liabilities :</b>					
Subscriptions .....	7,332	7,959	8,430	9,450	11,246
Loans due to Government (a) .....	4,977	5,857	6,712	7,712	8,709
Deposits .....	1,720	1,804	2,010	2,202	2,516
Reserves and profits .....	911	971	1,043	1,090	1,142
Bank overdraft .....	—	133	59	161	261
Other .....	66	79	64	56	73
<b>Total liabilities ....</b>	<b>15,005</b>	<b>16,801</b>	<b>18,317</b>	<b>20,671</b>	<b>23,947</b>

(a) Loans made to permanent building societies under the Commonwealth-State Housing Agreement.

Details of financial transactions by building societies during 1967-68 are given in the next table.

### Building Societies: Transactions, South Australia, 1967-68

Particulars	Permanent	Starr-Bowkett	Total
\$'000			
<b>Income :</b>			
Interest on mortgage loans .....	1,063	—	1,063
Other .....	110	50	160
<b>Total .....</b>	<b>1,173</b>	<b>50</b>	<b>1,223</b>
<b>Expenses :</b>			
Interest on borrowed funds .....	903	—	903
Administration and taxation .....	208	29	237
<b>Total .....</b>	<b>1,111</b>	<b>29</b>	<b>1,140</b>
<b>Deposits :</b>			
Received .....	1,265	—	1,265
Repaid .....	956	—	956
<b>Government housing funds (a) :</b>			
Received .....	1,200	—	1,200
Repaid .....	156	—	156
<b>Advances :</b>			
Paid .....	4,743	378	5,121
Repaid .....	1,856	327	2,184

(a) Transactions between Societies and State Treasury.

**CO-OPERATIVE SOCIETIES**

For the purpose of collecting the statistics in this section co-operative societies have been defined as producing, manufacturing, marketing or distribution societies which substantially fulfil the following conditions:

1. The greater part of the business of such a society to be transacted with its own shareholders.
2. Any distribution of surplus after payment of dividend on share capital to be amongst suppliers or customers in proportion to the business transacted with the society.
3. Limitation of voting power to one vote per person.
4. Dividend on share capital not to exceed 10 per cent.

All such societies must be registered under the Industrial and Provident Societies Act, 1923-1966. The Registrar of Industrial and Provident Societies must approve the rules of each society before it may be registered.

Co-operative societies may be classified under three broad headings—those serving producers, those serving consumers, and those fulfilling both functions. In the following table societies and members have been classified under these headings.

**Co-operative Societies: Societies and Membership, South Australia**

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
<b>Societies :</b>					
Producers societies .....	37	40	41	40	39
Consumers societies .....	19	19	18	17	16
Producers and consumers societies .....	14	14	14	14	13
<b>Total .....</b>	<b>70</b>	<b>73</b>	<b>73</b>	<b>71</b>	<b>68</b>
<b>Members :</b>					
Producers societies .....	16,530	16,784	18,137	18,425	18,431
Consumers societies .....	93,382	95,618	98,257	106,981	106,820
Producers and consumers societies .....	3,312	3,426	3,648	3,824	3,813
<b>Total members ....</b>	<b>113,224</b>	<b>115,828</b>	<b>120,042</b>	<b>129,230</b>	<b>129,064</b>

Of the 39 producers societies operating in 1967-68, 7 were co-operative wineries or distilleries, 9 represented dairy producers, and 12 were associated with fruit and vegetable production. Seven of the remaining 11 societies were associated with other rural production. Of the 16 co-operative consumers societies, 7 were trading as general storekeepers, the remainder offering specialised products or services. Producer-consumer societies were generally associated with the fruitgrowing industry.

Particulars of the aggregate income and expenditure of co-operative societies for the last five years are given in the following table.

**Co-operative Societies: Income, Expenditure and Appropriations  
South Australia**

Particulars	1963-64	1964-65	1965-66	1966-67	1967-68
	\$'000				
Income :					
Sales .....	41,814	45,422	49,732	50,387	55,442
Other .....	3,468	3,707	4,482	4,665	4,831
Total .....	45,282	49,130	54,214	55,053	60,273
Expenditure :					
Purchases .....	33,297	36,848	37,511	37,656	41,311
Working expenses (a) .....	9,054	9,783	12,144	13,261	14,680
Interest on external borrowing .....	481	559	573	625	699
Total .....	42,833	47,190	50,228	51,542	56,690
Appropriations :					
Rebates and bonuses .....	2,459	2,340	3,443	3,317	3,028
Interest and dividends to shareholders .....	304	370	367	429	477
Other .....	684	789	1,023	866	848
Total .....	3,446	3,499	4,833	4,612	4,353

(a) Includes provision for depreciation and bad debts.

Details of the liabilities and assets of the societies in each category for 1967-68 are given below. The seven co-operative wineries and distilleries accounted for 39 per cent of producer society assets.

**Co-operative Societies: Assets and Liabilities, South Australia, 1967-68**

Particulars	Producers Societies	Consumers Societies	Producers and Consumers Societies	Total
	\$'000			
Assets (a):				
Land and buildings .....	5,936	2,605	2,178	10,719
Fittings, plant and machinery ..	5,574	303	1,208	7,086
Stock .....	8,480	2,423	491	11,394
Sundry debtors .....	4,537	597	1,642	6,777
Cash .....	518	247	783	1,547
Profit and loss account .....	165	19	3	187
Other (b) .....	2,189	4,235	4,014	10,438
Total .....	27,399	10,429	10,320	48,147
Liabilities:				
Capital .....	3,313	4,293	887	8,492
Loan capital .....	7,143	3,205	3,008	13,356
Bank overdraft .....	2,987	92	2,321	5,400
Sundry creditors .....	2,162	652	1,489	4,304
Accumulated profits .....	835	837	3	1,674
Reserves and reserve funds (c) ..	4,537	1,212	911	6,660
Other (d) .....	6,422	137	1,701	8,260
Total .....	27,399	10,429	10,320	48,147

(a) Assets are shown at net value after deduction of provisions.

(b) Includes investments and advances to members.

(c) Excludes provision for depreciation and bad debts.

(d) Includes amounts due to members.

## ESTATES OF DECEASED PERSONS

During recent years more than 80 per cent of estates of deceased persons have been administered by executors following grants by the Supreme Court of probate on wills left by the deceased. Should the executorship of a will fail for any reason, for example by the death or renunciation of a nominated executor, the Court issues 'letters of administration with the will annexed' but the more usual 'letters of administration' relate to the estates of persons who died intestate. Tables in this section contain details of estates covered by the three types of grant during specified years.

Estates generally are those located in South Australia and not necessarily estates of deceased residents of this State. The net value of an estate is the gross value less proved liabilities; these liabilities do not include Commonwealth estate duty or State succession duties.

The following table shows the number and value of estates for which probate or administration was granted by the Supreme Court during the five years to 1967.

Estates of Deceased Persons, South Australia

Year	Estates	Gross Value of Estates		Net Value of Estates	Average Net Value per Estate
		Real	Personal		
	No.	\$'000	\$'000	\$'000	\$
MALES					
1963.....	2,411	13,887	26,895	36,818	15,271
1964.....	2,764	14,551	29,621	41,323	14,951
1965.....	2,523	15,166	30,915	41,368	16,396
1966.....	2,651	14,563	32,112	43,456	16,392
1967.....	2,726	15,839	35,656	47,247	17,332
FEMALES					
1963.....	1,715	5,988	10,403	15,337	8,943
1964.....	1,926	6,718	14,553	20,003	10,386
1965.....	1,892	6,476	15,914	21,256	11,234
1966.....	1,984	6,879	16,047	21,083	10,626
1967.....	2,161	7,355	18,516	24,295	11,243
PERSONS					
1963.....	4,126	19,875	37,298	52,155	12,641
1964.....	4,690	21,268	44,174	61,327	13,076
1965.....	4,415	21,642	46,829	62,624	14,184
1966.....	4,635	21,442	48,159	64,539	13,924
1967.....	4,887	23,194	54,171	71,542	14,639

The distribution of estates through various size groups and the gross value of real and personal estate respectively in each group are shown below for the years 1966 and 1967.

For both years estates with an individual net value under \$2,000 formed more than 24 per cent of the total number but less than 2 per cent of total net value, while estates under \$10,000 constituted 70 per cent of total numbers but less than 20 per cent of total net value. The few estates, about 6 per cent of the total, with an individual net value of \$50,000 or more constituted more than 45 per cent of the total net value.

Real estate formed slightly less than one-third of the total gross value for all estates.

### Estates of Deceased Persons: Size and Structure of Estates, South Australia

Size of Net Estate	1966				1967			
	Estates	Value of Estates			Estates	Value of Estates		
		Gross		Net		Gross		Net
		Real	Personal			Real	Personal	
\$	No.	\$'000	\$'000	\$'000	No.	\$'000	\$'000	\$'000
Under 2,000 .....	1,216	280	1,247	1,075	1,177	315	1,509	1,020
2,000 and under 4,000 .....	739	750	1,818	2,165	764	785	1,893	2,260
4,000 and under 6,000 .....	554	1,300	1,810	2,751	608	1,559	1,908	3,009
6,000 and under 8,000 .....	459	1,908	1,612	3,189	495	1,921	1,933	3,439
8,000 and under 10,000 .....	325	1,556	1,583	2,903	369	1,788	1,907	3,297
10,000 and under 20,000 .....	613	3,563	5,648	8,387	658	3,392	6,661	9,337
20,000 and under 30,000 .....	224	1,693	4,211	5,531	265	2,134	4,896	6,541
30,000 and under 40,000 .....	122	1,043	3,368	4,232	138	1,007	3,940	4,754
40,000 and under 50,000 .....	94	1,083	3,829	4,220	93	1,089	3,240	4,157
50,000 and under 100,000 .....	194	3,872	9,897	13,254	211	4,040	11,352	14,571
100,000 and under 200,000 .....	71	3,095	6,931	9,535	84	3,346	8,959	11,568
200,000 and under 400,000 .....	20	1,031	4,088	4,947	22	1,696	4,284	5,849
400,000 and over .....	4	267	2,115	2,352	3	121	1,690	1,738
All estates .....	4,635	21,441	48,157	64,541	4,887	23,194	54,171	71,542

The following table provides an analysis of estates on which probate or administration was granted during 1967 according to the age group of persons leaving those estates.

### Estates of Deceased Persons: Age and Sex of Deceased, Value of Estates South Australia, 1967

Age of Deceased	Males				Females			
	Estates	Value of Estates			Estates	Value of Estates		
		Gross	Net	Average Net		Gross	Net	Average Net
No.	\$'000	\$'000	\$'000	No.	\$'000	\$'000	\$'000	
Under 21 years ..	25	237	226	9.0	3	5	5	1.4
21 to 29 years ...	44	715	540	12.3	6	30	29	4.8
30 to 39 years ...	61	1,003	816	13.4	16	115	91	5.7
40 to 49 years ...	144	1,617	1,314	9.1	61	375	292	4.8
50 to 59 years ...	396	7,613	6,269	15.8	139	1,456	1,281	9.2
60 to 69 years ...	651	12,626	11,755	18.1	305	3,996	3,757	12.3
70 to 79 years ...	801	16,579	15,724	19.6	773	9,025	8,468	11.0
80 years and over	582	10,219	9,786	16.8	833	10,625	10,140	12.2
Age not stated ..	22	885	815	37.1	25	243	232	9.3
All ages .....	2,726	51,494	47,247	17.3	2,161	25,871	24,295	11.2

During each of the five years for which this analysis has been made there was a general tendency for the average net value of estates to increase progressively through all age groups for females, and to either the 60-69 or 70-79 age groups for males. Exceptions to the general trend have usually been in groups containing relatively few estates of which one or two were of exceptional value.

### REAL ESTATE MORTGAGES

The Real Property Act, 1886-1967, provides for the registration of mortgages on real estate and details of new loans and discharges are given in the following table.

#### Mortgages: Real Estate, South Australia

Year	New Loans		Discharges	
	No.	\$'000	No.	\$'000
1958-59 .....	24,395	113,926	16,715	43,072
1959-60 .....	28,874	124,337	19,454	50,791
1960-61 .....	29,187	164,801	20,093	56,426
1961-62 .....	28,070	137,072	21,331	59,782
1962-63 .....	33,929	181,982	25,607	74,785
1963-64 .....	37,813	207,097	29,002	93,116
1964-65 .....	38,631	220,077	30,334	95,425
1965-66 .....	38,779	262,812	30,661	104,547
1966-67 .....	37,937	215,926	30,689	104,808
1967-68 .....	36,513	209,450	30,291	97,343

The number of new loans in 1967-68 was the lowest since 1962-63 but was 50 per cent higher than in 1958-59. During the period 1958-59 to 1967-68 the average amount of each loan has increased from \$4,670 to \$5,736. Although the number of new loans in 1967-68 was lower than in 1966-67 the average amount of each loan was higher.

### INSTALMENT CREDIT FOR RETAIL SALES

The post-war era has seen extensive development in the use of instalment credit schemes in retail merchandising. Instalment credit is defined as covering all schemes under which repayment is made by regular predetermined instalments, such as hire-purchase, time payment, budget accounts and certain personal loans. Lay-bys and credit accounts not involving regular repayments are excluded.

Care should be taken in relating figures in this section to those for retail sales as the following statistics include certain sales to final purchasers, of items such as plant, machinery and tractors, which are not covered by the survey of retail sales. Transactions specifically excluded are the financing of sales of land and buildings, property improvements, services such as repair work and travel facilities, and rental and leasing schemes.

Although of declining relative importance, hire-purchase remains the most significant single form of instalment credit. The distinguishing feature of a hire-purchase agreement is that ownership of the goods does not pass to the purchaser



until the final instalment has been paid. Hire-purchase transactions include the letting of goods with an option to purchase and agreements to purchase by instalments, irrespective of whether the instalments are described as rent, hire or otherwise. Hire-purchase transactions are regulated by State legislation through the Hire-Purchase Agreements Act, 1960-1966, which provides for the content of hire-purchase agreements and for the rights and duties of parties to such agreements.

Details of instalment credit arranged during 1967-68 are given in the next table according to the nature of the commodity financed. In this and the following table the motor vehicle group includes new and used motor cars, motor cycles, commercial vehicles, tractors, caravans, motor parts and accessories. Plant and machinery includes farm machinery and implements, earth moving equipment, aircraft, industrial plant and machinery, business machines, and commercial refrigeration. Included in household and personal goods are furniture and furnishings, domestic refrigerators, electrical goods, musical instruments, bicycles, and other household and personal goods.

#### Instalment Credit for Retail Sales: New Agreements

##### South Australia and Northern Territory, 1967-68

Particulars	Unit	Motor Vehicles, Tractors, Etc.	Plant and Machinery	Household and Personal Goods	Total
<b>Hire-purchase :</b>					
Number of agreements .....	'000	18.9	2.3	67.7	88.9
Value of goods (a) .....	\$ million	27.4	6.2	13.2	46.8
Amount financed (a) .....	\$ million	19.0	4.1	10.4	33.5
<b>Other instalment credit :</b>					
Amount financed (a) .....	\$ million	38.0	1.0	17.6	56.6

(a) Excludes hiring charges, interest and insurance.

In instalment credit statistics which follow, transactions are classified to the type of business which originally wrote the agreement regardless of whether that agreement was subsequently assigned, discounted or mortgaged. Two main categories are used. 'Retail businesses' include both retailers who finance their own sales and any business set up by a retailer or group of retailers primarily to finance the sales of that retailer or group. All other businesses engaged in instalment credit financing of retail sales, irrespective of whether their main activity is financing, constitute 'non-retail finance businesses'.

Of the \$55.1 million provided by non-retail finance businesses for motor vehicle purchases in 1967-68, \$27.9 million was for new vehicles and \$27.2 million for used vehicles.

**Instalment Credit for Retail Sales: Amount Financed<sup>(a)</sup>****South Australia and Northern Territory**

Year	Motor Vehicles, Tractors, Etc.	Plant and Machinery	Household and Personal Goods	Total
\$ million				
RETAIL BUSINESSES				
1963-64 .....	2.6	0.3	22.5	25.4
1964-65 .....	2.3	0.3	23.0	25.6
1965-66 .....	2.0	0.4	20.7	23.1
1966-67 .....	1.8	0.3	18.8	20.9
1967-68 .....	2.0	0.3	19.2	21.5
NON-RETAIL FINANCE BUSINESSES				
1963-64 .....	44.9	3.8	7.6	56.3
1964-65 .....	55.6	4.2	8.7	68.5
1965-66 .....	47.6	4.4	13.3	65.4
1966-67 .....	46.4	4.3	10.9	61.6
1967-68 .....	55.1	4.7	8.8	68.6
ALL BUSINESSES				
1963-64 .....	47.6	4.1	30.1	81.8
1964-65 .....	57.9	4.5	31.7	94.1
1965-66 .....	49.6	4.8	34.0	88.5
1966-67 .....	48.1	4.7	29.7	82.5
1967-68 .....	57.0	5.1	28.0	90.1

(a) Excludes hiring charges, interest and insurance.

Details of balances outstanding at the end of each of the last five years are given below. A trend away from financing by 'retail businesses' and from hire purchase can be seen.

**Instalment Credit for Retail Sales: Balances Outstanding<sup>(a)</sup>****South Australia and Northern Territory***At 30 June*

Particulars	1964	1965	1966	1967	1968
\$ million					
Type of business :					
Retail businesses .....	37.1	35.1	31.5	27.9	25.9
Non-retail finance businesses	84.7	103.0	105.8	105.0	112.4
Total .....	121.7	138.1	137.3	132.9	138.3
Type of credit :					
Hire-purchase .....	87.4	91.9	84.5	75.8	65.6
Other instalment credit .....	34.4	46.2	52.8	57.1	72.7
Total .....	121.7	138.1	137.3	132.9	138.3

(a) Includes hiring charges, interest and insurance.

**FINANCE COMPANIES**

The primary aim of these statistics is to measure the flow of credit from finance companies to other sectors of the economy.

Finance companies are defined as companies, incorporated under the Companies Act, whose main activity is providing to the general public (businesses or persons) credit facilities of the following type: hire-purchase and other instalment credit for retail sales; wholesale hire-purchase; other consumer and commercial loans; and factoring. Companies whose main activity is leasing are included only if they are related under the Companies Act to another finance company. Special classes of financial institutions such as banks, insurance and investment companies and building and friendly societies are also excluded.

Finance companies here defined are not equivalent to 'non-retail finance businesses' mentioned on page 592. The statistics of 'instalment credit for retail sales' shown in the second and third tables below form part of the figures in the tables on pages 593-4.

Shown below is a summary of transactions of Finance Companies for the last four years. 'Leasing' covers leasing of business equipment and plant, including motor vehicles for business use. The value of goods leased during the period is the initial capital cost of goods newly leased plus the depreciated value of goods re-leased during the period. The value of goods on lease at the end of the period is the initial capital cost of the goods less depreciation to date.

**Finance Companies: Summary of Transactions**  
**South Australia and Northern Territory**

Particulars	1964-65	1965-66	1966-67	1967-68
	\$ million			
Leasing of business equipment and plant:				
Goods leased during the period .....	(a)	(a)	5.7	9.9
Goods on lease at end of period .....	6.4	7.5	10.4	16.4
Other transactions:				
Amount financed .....	206.8	188.4	199.3	226.7
Cash collections and other liquidations..	219.5	226.4	235.5	249.5
Balances outstanding at end of period ..	218.9	219.0	219.7	238.2

(a) Not available.

The amount financed, which is the actual amount of cash provided, may be classified according to the type of finance agreement. The following comments are offered to clarify the content of various items in the table below:

1. Instalment credit for retail sales is defined in the same way as in the previous section (see page 592).
2. Wholesale hire-purchase relates mainly to the financing of stocks of motor vehicles held under bailment or floor-plan schemes but includes also financing of other trading stock.
3. Personal loans are all loans to persons in their private capacity, other than loans classified as instalment credit or mortgage loans.

**Finance Companies: Amount Financed**  
**South Australia and Northern Territory**

Type of Agreement	1964-65	1965-66	1966-67	1967-68
	\$ million			
Instalment credit for retail sales . . .	67.6	60.1	57.2	66.3
Wholesale hire purchase . . . . .	55.8	55.6	77.1	91.8
Mortgage loans . . . . .	46.2	39.2	38.6	36.4
Personal loans . . . . .	8.6	8.5	8.6	12.1
Commercial loans (call or within 90 days) . . . . .	17.9	15.1	11.6	12.6
Other commercial loans (including factoring) . . . . .	10.9	10.1	6.3	7.6
<b>Total . . . . .</b>	<b>206.9</b>	<b>188.6</b>	<b>199.4</b>	<b>226.7</b>

Collections and other liquidations of balances and balances outstanding may be divided between contracts including charges and those excluding charges. Contracts including charges are those which have interest and other charges written into the contractual amount at the time of origin of the agreement. Practices in this respect vary between finance companies and between types of agreements.

Details of collections and other liquidations and balances outstanding are not available separately for the categories personal loans, mortgage loans and commercial loans, since finance companies do not, as a rule, segregate these types of agreements in their records of balances and collections.

**Finance Companies: Liquidations and Balances Outstanding**  
**South Australia and Northern Territory**

Year	Contracts including Charges		Contracts excluding Charges			Total
	Instalment Credit for Retail Sales	Other Consumer and Commercial Loans	Wholesale Hire Purchase	Commercial Loans Repayable at Call or within 90 Days	Other Consumer and Commercial Loans	
	\$ million					
	COLLECTIONS AND OTHER LIQUIDATIONS					
1964-65	73.1	41.8	57.3	19.0	28.4	219.7
1965-66	80.6	43.0	55.7	15.8	31.5	226.6
1966-67	79.7	40.6	77.2	9.9	28.3	235.7
1967-68	79.4	36.9	91.1	15.0	27.1	249.5
	BALANCES OUTSTANDING					
1964-65	106.7	73.4	7.2	4.0	27.9	219.1
1965-66	104.8	71.7	8.9	3.6	30.2	219.3
1966-67	101.3	72.1	10.3	5.0	31.2	219.9
1967-68	109.5	81.3	13.5	2.8	31.0	238.2

## APPENDIX A

### STATISTICAL SUMMARY

In the next 22 pages, a historical summary of some of the more important statistics relating to South Australia is shown. This is intended to present a general picture of the development of the State, with details being given (wherever they are available) for every 5th year for the period 1836-1926, and for each single year thereafter. Naturally the range of statistics available for the early years of the colony is very limited, and in addition it is not always possible to achieve perfect comparability in presenting details covering a period of some 130 years. Generally, all series on each page relate to either financial or calendar years but some financial year series have been included on pages which contain information shown in calendar years.

The first year shown on each page is the earliest for which any series on that page is available. Blanks at the top of some columns indicate that information relating to these particular series either was not collected or is not available for these early years, or is not available on a basis comparable to more recent statistics.

All major breaks in series are covered by footnotes, but minor changes are not so recorded, and the statistics should be interpreted with this in mind. An example can be quoted from the table on deaths from principal causes (page 599) where comparability is affected somewhat by changes in classification, particularly in 1950, but no footnote to this effect has been included.

The following standard symbols have been used throughout the summary:

'n.a.' Not available.

'—' Nil.

'p' Preliminary information subject to revision.

## POPULATION

Year	Population Estimate at 31 Dec. (a)			Population Growth			
				Recorded Natural Increase	Rate of Natural Increase	Total Increase	Rate of Popula- tion Growth
	Males	Females	Persons	(b)	(c)	(a)	%
1836.....	309	237	546			546	
1841.....	8,755	6,730	15,485			855	5.84
1846.....	14,711	11,182	25,893	577	22.29	3,433	15.29
1851.....	37,321	29,217	66,538	1,786	26.85	2,838	4.46
1856.....	56,264	51,622	107,886	3,341	30.97	10,499	10.78
1861.....	67,409	63,403	130,812	3,589	28.00	5,230	4.17
1866.....	88,024	80,883	168,907	4,029	24.39	7,430	4.60
1871.....	97,019	91,625	188,644	4,704	25.21	4,098	2.22
1876.....	116,894	107,666	224,560	4,674	21.51	14,484	6.89
1881.....	152,453	133,518	285,971	6,696	23.81	9,578	3.47
1886.....	160,814	145,896	306,710	6,943	22.54	-2,603	-0.84
1891.....	168,826	155,895	324,721	6,526	20.23	5,774	1.81
1896.....	179,024	173,043	352,067	5,974	16.97	99	0.03
1901.....	(d)180,440	(d)178,890	(d)359,330	(d)5,105	14.29	(d)2,080	0.58
1906.....	184,803	181,710	366,513	5,049	13.90	3,892	1.07
1911.....	214,061	205,331	419,392	7,019	17.05	12,530	3.08
1916 (e).....	212,585	229,253	441,838	6,780	15.35	-4,147	-0.93
1921.....	251,170	250,572	501,742	6,992	14.07	10,736	2.19
1926.....	285,013	275,912	560,925	6,606	11.92	13,877	2.54
1931.....	289,397	287,682	577,079	4,191	7.28	2,612	0.45
1932.....	290,254	289,039	579,293	3,564	6.16	2,214	0.38
1933.....	291,727	291,019	582,746	3,996	6.88	3,453	0.60
1934.....	292,531	291,958	584,489	3,056	5.24	1,743	0.30
1935.....	293,667	293,095	586,762	3,107	5.31	2,273	0.39
1936.....	294,835	294,935	589,770	3,447	5.86	3,008	0.51
1937.....	295,653	296,144	591,797	3,738	6.34	2,027	0.34
1938.....	297,604	298,238	595,842	3,871	6.53	4,045	0.68
1939 (e).....	299,212	300,101	599,313	3,879	6.50	3,471	0.58
1940 (e).....	297,885	301,171	599,056	4,309	7.19	-257	-0.04
1941 (e).....	301,645	304,721	606,366	4,677	7.78	7,310	1.22
1942 (e).....	303,511	307,467	610,978	4,566	7.50	4,612	0.76
1943 (e).....	305,655	310,372	616,027	6,663	10.86	5,049	0.83
1944 (e).....	308,853	314,177	623,030	7,327	11.83	7,003	1.14
1945 (e).....	312,588	318,294	630,882	7,984	12.73	7,852	1.26
1946 (e).....	317,238	323,180	640,418	9,352	14.72	9,536	1.51
1947 (e).....	325,399	329,233	654,632	10,102	15.62	14,214	2.22
1948.....	335,085	335,530	670,615	9,122	13.79	15,983	2.44
1949.....	349,600	346,018	695,618	9,669	14.21	25,003	3.73
1950.....	364,705	358,138	722,843	10,566	14.89	27,225	3.91
1951.....	375,188	368,597	743,785	10,279	14.03	20,942	2.90
1952.....	388,433	380,137	768,570	10,834	14.35	24,785	3.33
1953.....	397,610	388,055	785,665	11,194	14.42	17,095	2.22
1954.....	409,733	398,517	808,250	11,048	13.87	22,585	2.87
1955.....	423,042	411,619	834,661	10,958	13.36	26,411	3.27
1956.....	436,807	425,145	861,952	11,371	13.40	27,291	3.27
1957.....	448,411	437,841	886,252	11,960	13.68	24,300	2.82
1958.....	458,401	449,652	908,053	12,304	13.72	21,801	2.46
1959.....	471,868	462,629	934,497	12,429	13.49	26,444	2.91
1960.....	483,802	473,220	957,022	13,162	13.93	22,525	2.41
1961.....	493,356	483,765	977,121	14,584	15.03	20,099	2.10
1962.....	501,920	493,910	995,830	13,129	13.32	18,709	1.91
1963.....	513,255	506,535	1,019,790	13,166	13.06	23,960	2.41
1964.....	527,594	521,557	1,049,151	11,960	11.56	29,361	2.88
1965.....	542,635	537,312	1,079,947	12,103	11.38	30,796	2.94
1966.....	554,800	549,800	1,104,600	10,996	10.07	21,534	1.99
1967.....	561,800	556,600	1,118,500	11,315	10.18	13,887	1.26
1968.....	571,000	565,400	1,136,400	11,291	10.03	17,910	1.60

(a) Figures prior to July 1966 exclude full-blood Aborigines.

(b) Births and deaths of full-blood Aborigines, where identified in registrations, have been excluded from natural increase figures prior to 1 January 1967.

(c) Excess of births over deaths per 1,000 of mean population. The population used in the calculation of rate is inclusive or exclusive of full-blood Aborigines as appropriate.

(d) Northern Territory included prior to 1901, but subsequently excluded.

(e) During the 1914-18 War, defence personnel leaving the State were treated as departures, but during the 1939-45 War they were retained in the population and troops of other States and countries were excluded.

## DEMOGRAPHY

Year	Births		Infant Deaths (a)		Deaths		Rates from Principal Causes (b)		
	Number	Rate (b)	Number	Rate (c)	Number	Rate (b)	Rates from Principal Causes (b)		
							Diseases of the Heart	Cancer	Tuber- culosis
1846	937	36.19			360	14.02			
1851	2,759	41.47	539	195.36	973	14.62			
1856	4,488	41.60	610	135.92	1,147	10.63		0.05	0.98
1861	5,551	43.30	1,064	191.68	1,962	15.30		0.08	1.25
1866	6,782	41.06	1,385	204.22	2,753	16.67		0.16	1.25
1871	7,082	37.95	851	120.16	2,378	12.74		0.18	1.05
1876	8,224	37.84	1,228	149.32	3,550	16.34		0.35	1.22
1881	10,708	38.08	1,364	127.38	4,012	14.27		0.32	1.16
1886	11,177	36.29	1,409	126.06	4,234	13.75		0.34	1.34
1891	10,737	33.36	976	90.77	4,211	13.08		0.49	1.31
1896	10,012	28.44	1,015	101.02	4,038	11.47		0.53	1.17
1901	9,079	25.41	909	100.12	3,974	11.12		0.60	1.06
1906	8,921	24.57	675	75.66	3,872	10.66		0.77	1.08
1911	11,057	28.86	670	60.60	4,038	9.81	1.04	0.74	0.85
1916	11,857	26.85	868	73.21	5,077	11.50	1.29	0.81	0.93
1921	11,974	24.09	784	65.48	4,982	10.02	1.13	0.92	0.80
1926	11,483	20.73	509	44.33	4,877	8.81	1.00	0.96	0.71
1927	11,492	20.33	614	53.43	5,128	9.07	1.03	0.94	0.64
1928	11,408	19.98	542	47.51	5,147	9.02	1.07	1.01	0.60
1929	10,665	18.63	436	40.88	5,039	8.80	1.10	1.11	0.60
1930	9,984	17.42	483	48.38	4,851	8.46	1.05	1.04	0.51
1931	9,079	15.77	330	36.35	4,888	8.49	1.39	1.20	0.58
1932	8,521	14.74	312	36.62	4,957	8.58	1.48	1.13	0.48
1933	8,900	15.32	286	32.13	4,904	8.44	1.40	1.17	0.52
1934	8,459	14.50	301	35.58	5,403	9.26	1.64	1.12	0.48
1935	8,270	14.13	289	34.95	5,163	8.82	1.76	1.04	0.44
1936	8,911	15.16	277	31.09	5,464	9.29	1.87	1.26	0.40
1937	8,985	15.24	297	33.06	5,247	8.90	1.77	1.23	0.44
1938	9,410	15.86	287	30.50	5,539	9.34	2.02	1.30	0.37
1939	9,618	16.11	336	34.93	5,739	9.61	2.21	1.18	0.38
1940	10,017	16.72	356	35.54	5,708	9.53	2.25	1.25	0.37
1941	10,965	18.24	356	32.47	6,288	10.46	2.62	1.26	0.37
1942	11,278	18.51	448	39.72	6,712	11.02	2.73	1.25	0.41
1943	13,145	21.43	482	36.67	6,482	10.57	2.82	1.31	0.35
1944	13,311	21.49	387	29.07	5,984	9.66	2.64	1.27	0.30
1945	14,033	22.38	394	28.08	6,049	9.65	2.87	1.23	0.32
1946	15,813	24.90	428	27.07	6,461	10.17	3.03	1.29	0.29
1947	16,317	25.23	396	24.27	6,215	9.61	2.86	1.28	0.30
1948	15,870	24.00	472	29.74	6,748	10.20	3.08	1.42	0.28
1949	16,042	23.58	444	27.68	6,373	9.37	2.90	1.23	0.21
1950	17,306	24.39	416	24.04	6,740	9.50	3.05	1.24	0.19
1951	17,463	23.84	428	24.51	7,184	9.81	3.24	1.24	0.15
1952	17,884	23.69	413	23.09	7,050	9.34	3.10	1.29	0.12
1953	18,156	23.39	375	20.65	6,962	8.97	3.00	1.27	0.06
1954	18,227	22.89	368	21.29	7,179	9.01	3.11	1.22	0.08
1955	18,494	22.55	431	23.30	7,536	9.19	3.12	1.28	0.06
1956	18,964	22.35	377	19.88	7,593	8.95	3.24	1.16	0.05
1957	19,536	22.35	403	20.63	7,576	8.67	2.91	1.29	0.05
1958	20,047	22.35	449	22.40	7,743	8.63	2.93	1.26	0.07
1959	20,372	22.12	422	20.71	7,943	8.62	2.89	1.22	0.05
1960	20,966	22.19	397	18.94	7,804	8.26	3.06	1.21	0.04
1961	22,399	23.09	448	20.00	7,815	8.06	2.92	1.26	0.06
1962	21,361	21.67	409	19.15	8,232	8.35	3.06	1.37	0.03
1963	21,367	21.20	399	18.67	8,201	8.14	2.99	1.27	0.04
1964	20,866	20.16	397	19.03	8,906	8.61	3.24	1.32	0.01
1965	20,891	19.63	385	18.43	8,788	8.26	3.11	1.30	0.03
1966	20,319	18.62	356	17.52	9,323	8.54	3.23	1.33	0.02
1967 (d)	20,386	18.34	346	16.97	9,071	8.16	3.09	1.35	0.02
1968 (d)	21,207	18.83	345	16.27	9,916	8.81			

(a) Under one year of age from 1871, under two years of age in prior years.

(b) Rate per 1,000 of mean population.

(c) Rate per 1,000 live births registered.

(d) Vital events of full-blood Aborigines, where identified in registrations, were excluded prior to 1967.

## SOCIAL DEVELOPMENT

## Marriages and Divorces; Law and Order

Year	Marriages		Divorces (b)	Bank- ruptcies	Court Convictions		Police (g)	
	Total	Rate (a)			Supreme Court (c)	Magis- trate's Courts (d)	Active Strength	Expen- diture by State (e)
								\$'000
1841.....				36	37			
1846.....	220	8.50		16	40			
1851.....	189	2.84		106	103		127	
1856.....	1,171	10.85		88	85	2,919	174	
1861.....	1,158	9.03		115	62	3,025	151	
1866.....	1,299	7.86		252	107	4,341	208	90
1871.....	1,250	6.70		247	91	4,864	187	74
1876.....	1,852	8.52		200	129	7,905	257	108
1881.....	2,308	8.21		696	213	13,231	371	164
1886.....	1,976	6.42	10	535	121	6,808	401	178
1891.....	2,315	7.21	5	142	85	6,918	388	172
1896.....	2,183	6.20	6	240	110	5,149	347	150
1901.....	2,304	6.45	6	165	98	4,968	359	152
1906.....	2,679	7.38	3	172	92	5,249	373	153
1911.....	4,036	9.80	20	190	74	7,303	423	183
1916.....	3,602	8.16	14	324	52	7,145	541	262
1921.....	4,383	8.82	88	155	97	8,968	566	391
1926.....	4,503	8.13	71	439	174	21,417	633	499
1927.....	4,501	7.96	97	493	196	22,876	645	524
1928.....	4,146	7.26	113	446	264	18,665	717	550
1929.....	3,719	6.50	106	306	261	17,353	802	630
1930.....	3,312	5.78	146	622	304	15,609	785	656
1931.....	3,069	5.33	138	996	274	14,760	763	641
1932.....	3,636	6.29	134	654	236	14,705	743	586
1933.....	3,973	6.84	163	570	224	13,060	740	550
1934.....	4,310	7.39	188	626	206	13,728	719	549
1935.....	4,845	8.28	211	597	172	14,838	705	556
1936.....	5,182	8.81	213	551	171	14,920	701	570
1937.....	5,340	9.06	206	468	183	17,297	692	599
1938.....	5,489	9.25	243	461	172	18,341	712	641
1939.....	5,670	9.50	241	630	179	20,429	724	654
1940.....	6,950	11.60	309	437	163	18,364	723	677
1941.....	6,855	11.40	273	284	177	21,990	707	689
1942.....	8,129	13.34	312	222	211	(f)	680	695
1943.....	6,263	10.21	452	93	208	22,502	674	712
1944.....	6,019	9.72	503	49	158	22,079	704	734
1945.....	5,321	8.49	617	24	203	20,554	771	770
1946.....	6,700	10.55	654	23	231	20,585	830	819
1947.....	6,668	10.31	695	32	246	24,491	833	888
1948.....	6,704	10.14	630	32	185	24,164	869	1,052
1949.....	6,247	9.18	590	52	205	22,834	928	1,208
1950.....	6,585	9.28	661	44	207	25,496	942	1,398
1951.....	6,646	9.07	637	53	307	28,675	913	1,647
1952.....	6,241	8.27	581	76	328	27,432	952	2,073
1953.....	6,149	7.92	628	91	330	30,229	982	2,429
1954.....	6,190	7.77	594	89	312	25,482	986	2,617
1955.....	6,226	7.59	624	106	340	29,264	969	2,517
1956.....	6,277	7.40	567	150	362	28,221	1,018	3,060
1957.....	6,581	7.53	529	244	459	30,658	1,143	3,303
1958.....	6,505	7.25	483	278	457	32,621	1,183	3,677
1959.....	6,614	7.18	503	366	499	34,203	1,243	4,084
1960.....	6,607	6.99	610	368	580	42,531	1,301	4,499
1961.....	6,804	7.01	718	561	606	52,155	1,376	5,043
1962.....	7,021	7.12	685	620	718	53,331	1,466	5,651
1963.....	7,302	7.24	765	584	745	57,189	1,441	5,825
1964.....	7,765	7.50	887	675	629	55,408	1,496	6,245
1965.....	8,680	8.16	852	582	713	62,238	1,558	6,912
1966.....	9,051	8.29	1,069	648	738	71,694	1,595	7,319
1967.....	9,434	8.49	929	659	707	87,110	1,660	8,417
1968.....	9,652	p 8.57	915	756	692	105,027	1,777	9,206

(a) Rate per 1,000 of mean population. (b) Dissolutions made absolute. (c) Distinct persons only.

(d) Each type of offence counted separately when there are multiple charges against an individual.

(e) Net expenditure from 1939, previously gross expenditure.

(f) Year ended 30 June from 1943.

(g) Year ended 30 June.



## SOCIAL DEVELOPMENT

## Education

Year	Number of Schools (a)		Number of Pupils (a)				Universities		Total State Expenditure on Education (d)
	State	Private	State Schools			Private Schools	Students	Receipts (including Government Grants)	
			Primary (b)	High (b)	Technical (c)				
								\$'000	\$'000
1851 .....	115		3,031						6
1856 .....	147		6,516						24
1861 .....	219	236	10,711						30
1866 .....	292	n.a.	14,690						44
1871 .....	307	n.a.	15,791						48
1876 .....	281	326	25,889				58	16	116
1881 .....	405	363	36,888				74	102	268
1886 .....	504	n.a.	44,405				197	26	254
1891 .....	552	285	47,094				246	24	266
1896 .....	639	232	59,944				320	24	312
1901 .....	706	230	63,183				591	38	390
1906 .....	708	215	57,270			9,753	626	45	380
1911 .....	743	184	53,494	1,800	2,811	12,596	641	40	522
1916 .....	857	(e)222	63,935	3,047	3,571	(e)14,748	491	55	650
1921 .....	973	177	77,111	3,067	6,045	15,870	1,338	177	1,183
1926 .....	1,019	195	79,204	6,527	7,216	18,543	1,575	221	1,762
1927 .....	1,028	193	80,298	7,472	7,748	18,088	1,724	238	2,093
1928 .....	1,043	191	81,231	8,060	7,750	17,867	1,778	221	2,184
1929 .....	1,068	196	80,618	8,861	8,324	17,997	1,813	252	2,256
1930 .....	1,074	195	80,332	9,558	7,783	17,142	2,085	322	2,330
1931 .....	1,075	193	81,218	10,503	6,585	15,951	2,092	218	2,185
1932 .....	1,087	190	80,905	9,880	6,302	15,965	2,084	224	1,990
1933 .....	1,107	195	80,215	9,683	6,808	15,703	2,123	246	1,978
1934 .....	1,111	192	78,753	8,778	7,457	16,171	2,066	238	1,936
1935 .....	1,123	193	77,714	8,936	8,339	16,427	2,072	230	1,931
1936 .....	1,100	190	75,411	9,280	8,654	17,007	2,025	420	2,117
1937 .....	1,091	193	72,849	9,722	9,247	17,381	2,113	335	2,238
1938 .....	1,078	184	69,664	9,701	9,610	17,036	2,307	323	2,359
1939 .....	1,054	188	66,861	10,608	9,721	17,207	2,354	286	2,452
1940 .....	1,060	182	65,682	10,546	9,980	19,974	2,443	418	2,523
1941 .....	1,006	181	63,303	10,761	10,518	20,098	2,211	300	2,515
1942 .....	950	178	61,326	10,173	9,768	19,207	1,799	328	2,563
1943 .....	897	172	59,764	11,196	10,952	20,690	1,897	536	2,588
1944 .....	909	168	59,460	12,265	12,534	21,001	2,132	405	2,816
1945 .....	837	159	60,029	11,583	14,178	22,031	2,599	381	3,096
1946 .....	811	157	61,242	11,870	16,175	22,317	3,723	508	3,387
1947 .....	782	155	63,853	11,723	16,665	21,954	4,045	670	4,001
1948 .....	773	154	66,653	11,550	18,145	23,202	4,266	620	4,673
1949 .....	759	157	71,337	11,922	18,664	23,666	4,126	608	5,210
1950 .....	743	158	76,369	12,732	18,910	25,112	4,069	871	6,201
1951 .....	728	156	81,642	14,106	18,961	26,921	3,720	1,053	7,806
1952 .....	716	155	89,630	15,121	20,206	28,851	3,612	1,387	9,842
1953 .....	723	157	97,262	16,933	20,542	29,798	3,565	1,631	12,097
1954 .....	716	166	105,022	17,972	21,785	30,853	3,555	1,588	13,020
1955 .....	701	165	111,909	19,485	23,078	32,957	3,617	1,854	14,458
1956 .....	699	171	118,365	22,134	25,647	35,326	3,828	2,132	17,293
1957 .....	694	171	123,132	24,734	27,482	36,591	4,424	2,368	18,980
1958 .....	674	169	125,678	28,189	31,383	37,956	4,816	3,603	21,475
1959 .....	668	170	129,850	33,042	33,809	39,754	5,300	4,054	25,767
1960 .....	681	171	132,372	37,901	30,404	41,418	5,723	4,669	29,944
1961 .....	686	174	135,274	41,889	31,140	42,184	6,250	6,398	34,471
1962 .....	682	172	136,924	46,499	32,760	43,299	6,824	7,019	40,309
1963 .....	682	174	140,520	49,637	34,193	43,583	7,416	8,119	44,842
1964 .....	685	177	145,042	54,026	38,448	44,519	8,203	10,760	50,854
1965 .....	700	179	151,128	57,829	42,858	44,564	8,658	13,265	57,362
1966 .....	698	179	154,393	60,860	43,391	44,043	9,364	11,385	64,562
1967 .....	688	180	157,596	65,662	43,056	43,312	9,658	14,517	68,286

(a) Includes Northern Territory prior to 1958.

(b) Net enrolment. Includes correspondence pupils and pupils receiving junior technical education.

(c) Net enrolment plus correspondence pupils. Includes Institute of Technology.

(d) Year ended 30 June. (e) Private schools compulsorily registered—previous years incomplete.

## STATISTICAL SUMMARY

## SOCIAL DEVELOPMENT

## Health

Year	Public Hospitals				Mental Hospitals(a)		Medical Practitioners Registered	Nurses Registered
	Number of Hospitals	Patients Treated	Revenue		Admissions During Year	Patients at end of Year		
			State Aid	Total				
			\$'000	\$'000				
1846.....	1				10	6	22	
1851.....	1	413			9	11	68	
1856.....	1	559			69	73	101	
1861.....	1	795			68	167	111	
1866.....	1	1,257			88	224	85	
1871.....	1	1,433			111	324	77	
1876.....	1	2,282			149	427	94	
1881.....	1	2,258			199	606	113	
1886.....	1	2,022			207	744	152	
1891.....	1	2,301			224	815	177	
1896.....	1	2,633			195	934	279	
1901.....	1	3,554			214	988	341	
1906.....	9	4,476			231	994	242	
1911.....	21	8,547	96	132	273	1,084	299	
1916.....	27	12,453	130	186	302	1,158	326	
1921.....	31	15,642	254	397	272	1,190	360	
1926.....	45	22,438	467	730	249	1,282	445	1,271
1927.....	46	24,480	500	751	272	1,306	476	1,309
1928.....	47	25,167	452	741	280	1,350	437	1,399
1929.....	49	25,787	601	915	260	1,374	445	1,472
1930.....	50	26,114	451	736	260	1,404	445	1,565
1931.....	51	26,505	356	574	250	1,395	457	1,601
1932.....	52	28,780	354	591	250	1,410	461	1,650
1933.....	52	29,306	405	678	271	1,465	464	1,687
1934.....	52	31,686	377	659	267	1,519	461	1,757
1935.....	52	31,878	369	652	269	1,572	480	1,826
1936.....	52	34,014	383	730	272	1,627	477	1,886
1937.....	52	35,477	414	775	270	1,709	509	1,977
1938.....	52	37,285	502	891	254	1,747	792	2,068
1939.....	55	39,146	539	931	286	1,800	804	2,239
1940.....	56	41,392	575	1,017	240	1,847	802	2,359
1941.....	55	40,593	607	1,063	247	1,905	814	2,562
1942.....	55	40,137	625	1,200	219	1,892	839	2,768
1943.....	57	41,620	642	1,301	197	1,889	846	2,914
1944.....	58	43,582	762	1,479	276	1,925	866	3,006
1945.....	(b)	(b)	(b)	(b)	(b)	(b)	883	3,153
1946.....	58	46,696	836	1,697	302	2,024	947	3,314
1947.....	59	52,388	1,135	2,133	332	2,107	983	3,380
1948.....	59	50,480	1,382	2,476	330	2,165	1,012	3,589
1949.....	60	53,558	1,671	3,065	398	2,213	1,053	3,808
1950.....	59	54,334	2,109	3,719	379	2,310	1,111	4,018
1951.....	60	57,401	2,694	4,503	452	2,411	1,172	4,199
1952.....	61	59,374	3,739	6,110	426	2,425	1,244	4,461
1953.....	62	61,681	4,673	7,442	498	2,534	1,202	4,585
1954.....	62	62,138	4,340	7,386	548	2,644	1,265	4,724
1955.....	63	64,310	5,524	8,819	516	2,612	1,348	4,884
1956.....	65	69,295	8,214	11,702	553	2,658	1,395	5,026
1957.....	65	73,249	11,370	15,449	543	2,594	1,469	5,122
1958.....	64	75,282	10,425	15,372	659	2,667	1,507	5,475
1959.....	65	79,426	10,260	15,638	712	2,643	1,601	5,583
1960.....	65	82,948	10,474	16,829	1,637	2,810	1,681	5,817
1961.....	66	87,386	10,155	17,414	1,846	2,833	1,739	6,123
1962.....	65	89,409	10,366	18,350	1,925	2,914	1,821	6,523
1963.....	65	94,144	10,007	19,307	2,604	2,799	1,883	6,879
1964.....	65	99,491	12,094	21,166	3,132	2,838	2,002	7,255
1965.....	65	105,098	14,171	24,084	3,061	2,752	2,080	7,699
1966.....	67	111,313	19,681	30,386	2,810	2,646	2,175	8,065
1967.....	65	117,693	22,138	34,532	2,866	2,494	2,282	8,467
1968.....	65	122,835	16,626	31,039	2,733	2,465	2,373	8,832

(a) From 1959-60 covers all in-patients (certified and voluntary) in institutions. Prior to this covered only certified patients in two 'long-term' institutions.

(b) Year ended 30 June from 1946.

## SOCIAL DEVELOPMENT

## Social Welfare

Year	Public Relief	Children's Welfare	Pensions and Benefits Paid in South Australia by Commonwealth Government					Pensioners	
	Expenditure	Expenditure	Age and Invalid Pensions	War and Service Pensions	Child Endowment	National Health Services	Total (includes Other)	Age and Invalid	War and Service
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	Number	Number
1895-96 .....	30.0	28.4							
1900-01 .....	36.6	35.4							
1905-06 .....	40.0	38.2							
1910-11 .....	29.0	46.4						7,237	
1911-12 .....	32.0	52.6						7,996	
1912-13 .....	39.2	56.0						8,708	
1913-14 .....	44.6	58.0						9,575	
1914-15 .....	55.8	62.8						10,529	
1915-16 .....	69.8	67.0	544	20				10,993	794
1916-17 .....	76.0	74.6	704	230			1,052	11,301	4,272
1917-18 .....	73.4	78.2	728	528			1,370	11,703	10,119
1918-19 .....	72.4	79.4	882	822			1,816	11,782	14,959
1919-20 .....	84.0	84.4	898	890			1,902	12,086	16,794
1920-21 .....	101.8	95.0	910	1,028			2,060	12,320	14,663
1921-22 .....	94.2	98.5	924	890			1,936	12,513	14,210
1922-23 .....	86.2	97.1	942	876			1,936	12,759	14,341
1923-24 .....	91.0	98.0	1,142	894			2,152	13,141	14,848
1924-25 .....	101.4	98.6	1,174	932			2,224	13,519	15,542
1925-26 .....	117.6	100.7	1,404	978			2,496	14,098	16,144
1926-27 .....	129.8	102.8	1,454	1,006			2,574	14,666	16,589
1927-28 .....	206.0	112.2	1,536	1,002			2,656	15,581	16,835
1928-29 .....	298.2	109.8	1,648	986			2,746	16,774	16,581
1929-30 .....	441.8	114.8	1,798	998			2,900	18,291	16,791
1930-31 .....	154.8	103.7	1,982	994			3,074	20,602	16,653
1931-32 .....	1,922.2	95.2	1,878	908			2,848	21,897	15,801
1932-33 .....	1,500.6	90.9	1,826	844			2,726	21,461	15,517
1933-34 .....	1,359.0	88.8	1,896	854			2,804	22,805	15,352
1934-35 .....	1,277.0	87.8	2,068	892			3,016	24,517	15,248
1935-36 .....	1,163.4	89.4	2,298	942			3,298	26,134	15,997
1936-37 .....	1,086.6	89.4	2,522	1,036			3,622	27,308	16,340
1937-38 .....	995.4	93.7	2,868	1,076			4,010	28,039	16,865
1938-39 .....	989.6	94.0	2,836	1,098			4,008	28,857	16,680
1939-40 .....	1,062.2	99.2	2,908	1,104			4,086	29,521	16,145
1940-41 .....	389.9	101.4	3,032	1,088			4,192	29,642	15,424
1941-42 .....	288.1	106.6	3,274	1,108	1,720		6,162	28,422	15,296
1942-43 .....	232.8	113.3	3,628	1,274	1,810		7,076	27,423	16,333
1943-44 .....	214.8	131.5	3,688	1,654	1,908		8,076	27,530	18,472
1944-45 .....	215.4	143.1	3,624	1,838	1,870		8,276	27,507	22,071
1945-46 .....	238.7	155.2	4,670	2,272	2,854	244	11,262	29,512	30,687
1946-47 .....	250.7	197.8	5,102	2,692	3,196	856	13,212	32,387	35,117
1947-48 .....	261.3	224.4	6,284	3,046	3,212	770	14,708	34,229	38,505
1948-49 .....	279.3	255.6	7,170	3,718	4,024	1,054	17,442	35,470	42,931
1949-50 .....	273.0	287.5	7,888	4,178	4,938	1,220	19,966	36,524	47,303
1950-51 .....	279.0	337.6	8,600	5,214	7,564	2,122	25,216	36,582	51,589
1951-52 .....	336.6	446.7	10,360	6,442	8,298	3,554	30,532	37,363	54,758
1952-53 .....	445.6	466.8	12,616	7,130	9,540	4,154	25,878	39,700	58,591
1953-54 .....	458.6	475.7	14,150	7,686	9,154	4,880	38,202	42,216	61,039
1954-55 .....	487.2	491.2	15,310	8,778	9,428	5,824	41,560	45,147	63,767
1955-56 .....	545.6	553.0	17,718	9,074	10,998	6,140	46,322	47,754	66,515
1956-57 .....	686.4	494.0	19,244	9,572	10,500	6,710	48,926	50,209	68,291
1957-58 .....	865.9	545.6	21,432	10,664	10,860	7,704	54,256	52,699	69,852
1958-59 .....	770.4	674.6	23,150	10,860	12,618	9,868	60,460	55,181	71,331
1959-60 .....	641.9	778.1	26,366	12,697	11,794	11,977	66,157	57,336	72,013
1960-61 .....	691.4	914.8	28,537	13,722	14,092	12,811	73,594	60,483	72,695
1961-62 .....	773.5	1,107.5	32,844	14,241	12,671	14,567	80,283	64,374	74,454
1962-63 .....	693.1	1,129.9	33,951	14,867	12,861	16,066	83,393	64,156	73,239
1963-64 .....	693.3	1,275.5	36,120	16,224	15,916	17,080	91,514	65,573	72,518
1964-65 .....	704.3	1,516.8	38,309	16,006	16,563	18,948	96,362	66,798	70,678
1965-66 .....	841.6	1,716.6	39,691	17,692	16,988	21,254	102,661	67,999	68,439
1966-67 .....	996.3	1,914.4	43,720	16,776	19,063	23,100	111,394	70,521	66,624
1967-68 .....	1,047.5	2,008.2	46,711	17,252	17,835	25,448	116,625	74,016	65,078

NOTE: Unemployment relief payments paid by State Government and included in Public Relief to 1939-40. Unemployment benefits from 1945-46 paid by Commonwealth Government and included in Total Pensions and Benefits Paid.

## STATISTICAL SUMMARY

## EMPLOYMENT AND UNEMPLOYMENT

Year	Total Wage and Salary Earners (a)		Factory Employment (b)		Rural Employment (c)		Unemployment Benefits		Unemployed Registered (end June) (d)
	Males	Females	Males	Females	Males	Females	Average No. on Benefit	Amount Paid	
	'000	'000	'000	'000	'000	'000	\$'000		
1911 .....			22.6	5.3					
1912 .....			23.1	5.4					
1913 .....			23.3	5.2					
1914 .....			22.1	4.8					
1915 .....			20.8	4.7					
1916-17 .....			20.8	5.2					
1917-18 .....			21.3	5.3					
1918-19 .....			22.4	5.5					
1919-20 .....			23.4	6.0					232
1920-21 .....			24.5	5.9					688
1921-22 .....			25.0	6.2					880
1922-23 .....			28.0	6.7					443
1923-24 .....			30.3	7.0	37.9	3.5			491
1924-25 .....			31.2	7.1	38.4	3.3			718
1925-26 .....			33.1	6.9	38.8	3.2			1,391
1926-27 .....			34.1	7.0	38.8	2.7			1,900
1927-28 .....			32.3	6.8	38.7	2.5			5,009
1928-29 .....			30.4	6.4	38.8	2.2			5,825
1929-30 .....			26.5	5.7	38.4	2.3			11,297
1930-31 .....			19.3	4.6	38.9	2.6			23,588
1931-32 .....			18.9	4.9	39.2	2.8			23,738
1932-33 .....			20.9	5.4	39.7	3.1			20,516
1933-34 .....			23.7	5.7	40.0	3.4			16,559
1934-35 .....			27.3	6.2	41.4	3.1			13,111
1935-36 .....			31.4	7.1	41.7	2.6			10,970
1936-37 .....			33.4	7.3	42.3	3.0			8,033
1937-38 .....			36.3	7.8	41.4	2.9			7,737
1938-39 .....			35.4	8.0	41.3	2.5			8,574
1939-40 .....			36.3	8.7	38.7	2.8			5,978
1940-41 .....			40.1	10.8	n.a.	n.a.			1,745
1941-42 .....			49.9	15.3	n.a.	n.a.			—
1942-43 .....			52.8	20.0	29.6	5.1			—
1943-44 .....			50.7	18.9	32.9	6.5			—
1944-45 .....			49.1	16.4	33.6	6.2			—
1945-46 .....			49.5	13.7	35.7	5.5	778	146.4	3,147
1946-47 .....			56.7	14.0	38.1	5.0	200	40.2	1,310
1947-48 .....			59.1	14.3	38.1	5.8	51	8.0	778
1948-49 .....			60.9	14.9	38.1	5.5	14	1.2	654
1949-50 .....			63.1	15.3	38.6	7.0	326	66.2	431
1950-51 .....			66.8	16.2	36.9	6.1	6	0.8	406
1951-52 .....			68.0	15.9	37.4	4.7	17	2.0	1,613
1952-53 .....			67.1	13.4	38.3	5.0	841	264.0	2,343
1953-54 .....	178.6	55.7	70.7	14.8	37.8	5.6	270	100.4	964
1954-55 .....	183.9	60.1	73.7	15.9	37.6	5.0	66	24.8	1,207
1955-56 .....	194.0	64.0	76.1	16.4	37.3	4.7	77	22.2	1,948
1956-57 .....	193.3	64.1	75.5	16.4	36.4	3.9	681	227.4	3,363
1957-58 .....	194.4	65.9	75.9	16.6	35.2	2.7	1,534	611.0	5,082
1958-59 .....	201.1	68.4	77.4	16.7	35.0	3.6	1,641	724.8	3,958
1959-60 .....	206.4	72.6	81.3	17.7	33.8	2.6	1,223	498.2	4,547
1960-61 .....	207.5	72.3	81.9	18.1	34.0	2.3	1,610	685.6	9,035
1961-62 .....	211.2	76.7	81.8	17.3	33.7	2.1	3,643	1,785.6	6,886
1962-63 .....	219.6	80.9	86.7	18.6	33.3	1.9	2,244	1,184.7	6,479
1963-64 .....	229.4	86.0	90.9	19.9	33.2	1.4	1,513	751.1	4,339
1964-65 .....	239.9	93.4	94.7	21.5	32.6	1.3	800	390.4	3,533
1965-66 .....	242.1	97.7	96.2	22.1	32.1	1.0	1,306	708.9	7,357
1966-67 .....	243.2	99.7	96.1	22.1	31.3	0.8	3,094	1,653.2	8,484
1967-68 .....	250.0	106.0	98.9	22.5	29.7	0.7	3,299	1,637.4	8,359

(a) At June; includes all industries except rural, defence and female private domestics.

(b) Average employment including working proprietors during the year.

(c) Permanent employees only.

(d) Includes Northern Territory registrations.

## WAGES

Year	State Living Wage (a)		Commonwealth Basic Wage (a) (d)		Minimum Weekly Wage Rates (b)		Average Weekly Wage of Factory Employees (c)	
	Males	Females	Males	Females	Males	Females	Males	Females
	\$	\$	\$	\$	\$	\$	\$	\$
1911.....			5.10				4.38	1.59
1912.....			5.10				4.67	1.59
1913.....			5.10				4.90	1.69
1914.....			5.55		5.44	2.41	5.05	1.73
1915.....			6.35		5.47	2.45	4.93	1.63
1916.....	5.40		6.15		5.90	2.48	n.a.	n.a.
1917.....	5.40		5.85		6.31	2.78	5.58	1.80
1918.....	6.30	2.75	6.40		6.55	2.94	5.89	1.99
1919.....	6.30	3.00	7.00		7.04	3.32	6.07	2.15
1920.....	7.50	3.00	8.95		8.27	4.06	6.22	2.47
1921.....	7.95	3.50	7.95		8.94	4.52	7.31	2.88
1922.....	7.75	3.50	7.95		8.75	4.40	7.81	3.06
1923.....	7.85	3.50	8.55		9.08	4.63	7.80	3.19
1924.....	8.20	3.80	8.40		9.18	4.65	8.18	3.38
1925.....	8.55	3.95	8.60		9.43	4.88	8.38	3.52
1926.....	8.55	3.95	8.55		9.57	5.00	8.67	3.62
1927.....	8.55	3.95	8.80		9.66	4.99	9.18	3.84
1928.....	8.55	3.95	8.50		9.62	5.09	9.42	3.95
1929.....	8.55	3.95	8.85		9.72	5.13	9.33	4.00
1930.....	7.50	3.95	7.80		9.27	5.12	9.26	3.99
1931.....	6.30	3.15	5.81		7.50	4.39	8.43	3.61
1932.....	6.30	3.15	5.72		7.26	4.09	7.45	3.17
1933.....	6.30	3.15	5.96		7.34	4.10	7.32	3.10
1934.....	6.30	3.15	6.30		7.55	4.19	7.21	3.05
1935.....	6.60	3.15	6.70		7.79	4.24	7.38	3.12
1936.....	6.60	3.30	6.90		7.95	4.33	7.49	3.12
1937.....	7.40	3.65	7.40		8.58	4.68	7.89	3.20
1938.....	7.40	3.65	7.60		8.71	4.78	8.15	3.29
1939.....	7.80	3.80	7.70		9.41	4.96	8.49	3.32
1940.....	8.40	4.10	8.00		9.85	5.21	8.60	3.49
1941.....	8.70	4.35	8.40		10.58	5.54	9.32	3.89
1942.....	9.40	4.62	9.30		11.50	6.02	11.26	5.18
1943.....	9.40	4.62	9.40		11.61	6.12	12.07	6.05
1944.....	9.40	4.62	9.30		11.58	6.53	12.11	6.56
1945.....	9.40	4.62	9.30		11.60	6.72	11.74	6.34
1946.....	9.85	5.50	10.20		12.41	7.60	11.76	6.00
1947.....	10.60	5.90	10.60		13.78	8.80	12.74	6.52
1948.....	11.70	6.65	11.60		15.22	9.51	14.82	7.67
1949.....	12.50	6.85	12.60		16.44	10.10	16.99	8.76
1950.....	15.80	11.85	15.80	11.85	19.79	14.21	18.74	9.90
1951.....	19.50	14.60	19.50	14.60	23.60	17.02	22.43	12.38
1952.....	22.90	17.15	22.90	17.15	27.08	19.68	27.55	15.60
1953.....	23.10	17.30	23.10	17.30	27.35	19.91	30.00	17.38
1954.....	23.10	17.30	23.10	17.30	28.16	19.99	31.71	17.92
1955.....	23.10	17.30	23.10	17.30	28.50	20.18	33.97	18.35
1956.....	24.10	18.05	24.10	18.05	29.63	20.92	35.59	19.11
1957.....	25.10	18.80	25.10	18.80	30.69	21.95	36.67	19.52
1958.....	25.60	19.20	25.60	19.20	31.24	22.38	37.32	20.63
1959.....	27.10	20.30	27.10	20.30	33.99	23.92	38.17	20.90
1960.....	27.10	20.30	27.10	20.30	34.22	24.29	41.85	22.13
1961.....	28.30	21.20	28.30	21.20	35.46	25.20	43.28	22.78
1962.....	28.30	21.20	28.30	21.20	35.65	25.23	43.86	23.47
1963.....	28.30	21.20	28.30	21.20	36.40	25.52	45.71	23.86
1964.....	30.30	22.70	30.30	22.70	38.69	27.29	47.25	25.23
1965.....	30.30	22.70	30.30	22.70	39.48	27.75	51.72	26.39
1966.....	32.30	24.20	32.30	24.20	41.75	29.42	52.30	27.31
1967.....	33.30	25.20	(d)	(d)	43.78	31.30	55.39	28.89
1968.....	34.65	26.55	(d)	(d)	47.79	33.56	59.45	30.62

(a) At end of year.

(b) Adult rates, at end of year, for all industries excluding rural.

(c) Excludes drawings of working proprietors.

(d) Superseded by total wage from July 1967.

## STATISTICAL SUMMARY

## PRICES

Year	Retail Price Indexes: Adelaide						Agricultural Produce at Principal Markets		
	'C' Series (a)			Consumer (b)			Wheat (Per Bushel) (c)	Barley (Per Bushel)	Wool (Per Lb)
	Food and Groceries	Rent	All Groups	Food	Housing	All Groups			
							\$	\$	cents
1901 .....	575								
1906 .....	549								
1911 .....	570						0.346	0.375	7.07
1912 .....	645						0.379	0.400	6.36
1913 .....	626						0.358	0.375	7.40
1914 .....	683	611	699				0.367	0.250	7.21
1915 .....	858	574	780				0.725	0.550	6.97
1916 .....	835	573	798				0.475	0.325	8.97
1917 .....	805	606	832				0.475	0.367	11.39
1918 .....	862	656	887				0.475	0.442	11.96
1919 .....	1,012	707	1,018				0.550	0.542	12.14
1920 .....	1,225	783	1,164				0.900	0.600	11.76
1921 .....	941	819	989				0.800	0.442	11.22
1922 .....	937	852	954				0.504	0.383	9.96
1923 .....	1,019	887	1,008				0.492	0.375	14.80
1924 .....	1,002	942	1,015				0.467	0.333	18.33
1925 .....	1,029	963	1,028				0.608	0.542	19.14
1926 .....	1,045	927	1,026				0.621	0.400	12.45
1927 .....	1,030	942	1,018				0.529	0.363	12.35
1928 .....	993	1,022	1,027				0.544	0.496	14.47
1929 .....	1,055	986	1,037				0.473	0.377	12.47
1930 .....	937	916	952				0.433	0.308	7.57
1931 .....	789	755	837				0.229	0.225	5.68
1932 .....	761	691	802				0.317	0.296	5.73
1933 .....	731	694	789				0.281	0.223	6.10
1934 .....	767	700	806				0.263	0.242	11.37
1935 .....	780	736	820				0.304	0.271	6.82
1936 .....	798	795	839				0.383	0.223	9.93
1937 .....	826	832	859				0.515	0.406	11.38
1938 .....	861	868	888				0.356	0.352	9.40
1939 .....	897	888	906				0.227	0.271	7.58
1940 .....	900	892	936				0.406	0.354	9.95
1941 .....	905	893	988				0.447	0.486	9.87
1942 .....	1,046	893	1,075				0.456	0.332	9.79
1943 .....	1,003	893	1,102				0.531	0.450	11.37
1944 .....	993	892	1,098				0.618	0.432	11.32
1945 .....	1,002	892	1,102				0.563	0.546	11.21
1946 .....	1,006	894	1,120				0.802	0.633	11.24
1947 .....	1,067	897	1,165				0.993	0.892	18.37
1948 .....	1,230	903	1,277				1.543	1.685	29.90
1949 .....	1,351	912	1,393	38.6	38.4	45.0	1.242	0.838	36.78
1950 .....	1,494	929	1,521	41.7	40.0	48.4	1.442	1.127	48.14
1951 .....	1,931	949	1,833	48.2	42.5	54.6	1.463	1.169	107.63
1952 .....	2,380	1,055	2,159	62.5	47.6	66.8	1.650	1.627	53.77
1953 .....	2,444	1,155	2,246	68.7	55.9	73.1	1.681	1.613	62.48
1954 .....	2,525	1,174	2,277	71.2	61.5	74.7	1.452	1.017	62.68
1955 .....	2,657	1,247	2,354	72.9	63.2	75.6	1.335	1.360	54.73
1956 .....	2,871	1,358	2,466	76.2	67.6	78.1	1.350	1.060	46.98
1957 .....	2,710	1,468	2,463	78.9	72.3	81.2	1.450	1.100	61.52
1958 .....	2,768	1,592	2,536	76.9	74.9	81.8	1.456	1.188	46.76
1959 .....	2,998	1,674	2,647	80.7	76.7	83.6	1.402	1.121	38.03
1960 .....				84.6	78.3	86.2	1.465	1.010	44.85
1961 .....				90.9	83.2	89.8	1.507	0.916	40.14
1962 .....				87.7	85.9	89.5	1.516	1.121	41.59
1963 .....				86.6	86.7	89.1	1.468	1.100	44.87
1964 .....				88.8	88.7	90.2	1.433	1.114	54.22
1965 .....				93.9	92.1	93.9	1.412	1.153	44.14
1966 .....				97.1	95.7	97.0	1.501	1.176	46.71
1967 .....				100.0	100.0	100.0	1.488	1.192	45.22
1968 .....				104.7	102.1	102.9	1.602	1.190	37.59

(a) Base: Average all groups six capital cities 1923 to 1927 = 1,000.

(b) Base of each group 1966-67 = 100. Index numbers are for year ended 30 June in the year stated.

(c) Bulk wheat from 1962, previously bagged; price of bagged wheat in 1968 was \$1.670.

# STATISTICAL SUMMARY

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## METEOROLOGY

Year	Rainfall				Evapor- ation	Sunshine	Temperature			
	Agricultural Areas (a)		Adelaide				Adelaide			
	Wheat- growing Season (b)	Total	Days of Rain	Total			Total	Total	Extreme Maxi- mum	Extreme Mini- mum
	Inches	Inches	Days	Inches	Inches	Hours	°F	°F	°F	
1841			93	17.96						
1846			114	26.89						
1851			128	30.95						
1856			118	24.93						
1861	20.66	27.83	147	24.04			109.0	35.0	63.4	
1866	19.89	21.86	116	20.11			109.5	37.2	63.8	
1871	18.53	23.55	137	23.25	52.94		111.4	37.4	64.0	
1876	13.66	15.74	110	13.43	60.95		114.2	32.5	62.5	
1881	15.07	18.13	135	18.02	55.97		105.8	35.2	62.1	
1886	15.20	17.36	141	14.42	55.93	2,588.0	112.4	35.6	62.7	
1891	13.34	16.13	113	14.01	52.03	2,752.7	102.7	36.2	62.2	
1896	12.32	16.92	121	15.17	52.65	2,643.9	111.2	34.4	63.4	
1901	16.11	18.26	124	18.01	58.81	2,522.6	110.0	35.2	63.5	
1906	16.43	19.49	127	26.53	55.13	2,366.4	113.1	36.1	63.7	
1911	10.35	14.83	127	16.03	48.14	2,415.0	102.8	34.9	62.9	
1916	19.18	21.18	142	28.16	55.53	2,511.9	107.5	38.3	62.0	
1921	13.43	19.72	100	22.64	58.19	2,658.0	109.6	37.0	64.7	
1926	13.65	15.11	116	22.20	57.99	2,688.6	104.1	37.4	63.1	
1927	9.04	11.39	101	16.92	59.67	2,670.8	110.0	36.1	63.0	
1928	8.95	12.50	107	19.43	60.44	2,750.2	108.7	35.4	63.4	
1929	8.79	12.05	119	17.51	59.82	2,544.9	104.2	35.0	62.2	
1930	11.06	12.59	116	18.65	66.24	2,744.1	112.4	36.9	64.9	
1931	12.76	14.38	145	22.26	59.74	2,534.5	114.6	37.6	62.3	
1932	14.61	17.80	141	25.04	52.84	2,351.9	110.3	36.8	62.6	
1933	11.40	13.79	130	22.12	55.52	2,487.7	107.7	36.7	62.2	
1934	11.67	13.44	115	20.24	61.63	2,528.3	110.5	37.7	64.4	
1935	11.73	14.80	140	23.45	57.69	2,411.2	107.8	37.9	62.9	
1936	9.44	13.39	123	19.34	60.03	2,430.8	103.7	37.1	62.8	
1937	11.94	16.62	128	23.01	62.62	2,294.1	105.9	37.7	63.3	
1938	9.62	12.95	119	19.26	66.18	2,425.9	106.6	36.0	63.2	
1939	13.45	16.88	139	23.29	65.99	2,521.2	117.7	34.7	63.3	
1940	8.19	10.53	116	16.16	66.86	2,564.6	110.1	36.5	62.6	
1941	11.80	17.61	126	22.56	63.14	2,471.8	110.0	37.9	62.5	
1942	16.51	18.89	133	25.44	65.91	2,422.2	112.5	38.2	63.2	
1943	10.71	13.47	135	17.84	62.81	2,416.7	112.2	36.8	61.6	
1944	9.16	11.18	114	17.13	64.29	2,333.7	103.4	32.5	62.3	
1945	11.19	14.10	105	17.85	59.94	2,431.2	107.0	34.0	62.0	
1946	10.32	20.29	135	22.59	54.51	2,301.0	106.4	35.6	61.3	
1947	13.87	18.64	145	21.89	61.93	2,311.3	105.3	38.0	62.5	
1948	12.51	14.06	122	21.40	63.85	2,401.7	110.1	37.2	61.3	
1949	12.48	14.71	119	18.23	58.74	2,317.7	100.4	36.6	60.5	
1950	11.29	14.59	91	16.06	65.25	2,677.5	104.0	38.4	62.6	
1951	16.94	18.88	135	25.44	64.78	2,338.7	104.9	36.6	62.5	
1952	16.27	18.63	128	19.99	59.97	2,459.2	105.5	34.9	60.4	
1953	12.92	15.87	121	20.00	67.40	2,584.7	106.4	39.0	61.9	
1954	11.24	13.83	109	16.73	66.13	2,502.6	103.0	38.1	62.0	
1955	15.71	19.36	134	24.58	66.03	2,396.1	109.0	38.4	62.1	
1956	18.18	20.46	154	27.24	64.50	2,378.6	100.9	39.4	61.6	
1957	8.67	10.06	110	16.71	68.34	2,672.5	105.7	38.2	62.2	
1958	14.21	16.25	121	17.57	65.81	2,454.7	102.2	34.2	61.6	
1959	6.28	9.53	88	11.32	68.89	2,591.9	110.0	37.5	63.2	
1960	15.59	18.94	129	23.07	63.22	2,355.6	107.2	36.4	61.3	
1961	11.99	13.45	122	14.91	n.a.	2,586.3	105.5	37.2	64.0	
1962	10.24	13.59	125	17.96	n.a.	2,559.1	108.8	39.5	63.0	
1963	14.93	16.95	118	24.43	63.76	2,369.1	103.8	38.0	62.6	
1964	15.85	17.81	135	21.89	59.32	2,199.5	104.5	36.1	61.3	
1965	10.51	11.52	111	13.34	64.89	2,439.1	101.9	36.7	63.2	
1966	11.09	16.67	123	19.49	63.45	2,431.6	105.3	38.0	62.4	
1967	6.37	8.67	89	10.11	76.32	2,841.3	102.2	39.0	63.1	
1968	16.58	21.29	141	25.72	73.62	2,409.7	109.5	35.9	62.6	

(a) From 1905 rainfall is the weighted average over agricultural areas, previously average of 50 selected stations. (b) Eight months April to November inclusive.

## LAND TENURE AND CULTIVATION

Year	Land Tenure			Rural Holdings	Area of Rural Holdings	Area under Crop		Area of Pastures Top-dressed	Area Under Irrigation
	Alienated and Set Apart	Under Lease				Manured	Total		
		Pastoral	Total						
	'000 Acres	'000 Acres	'000 Acres	No.	'000 Acres	'000 Acres	'000 Acres	'000 Acres	'000 Acres
1836-37	61								
1841-42	307						7		
1846-47	440						33		
1851-52	707	9,799					81		
1856-57	1,580	14,620					203		
1861-62	2,381	29,457					401		
1866-67	3,426	26,785					604		
1871-72	4,622	45,376					838		
1876-77	6,839	89,385					1,229		
1881-82	9,869	119,846					2,156		
1886-87	9,528	126,541					2,285		
1891-92	8,594	97,388					1,928		
1896-97	8,671	112,186					2,052		
1901-02	8,089	68,916	85,577			827	2,237		
1906-07	8,947	76,686	94,970			1,555	2,157		
1911-12	11,654	91,547	111,002	27,120	116,168	2,495	2,965		
1916-17	13,882	97,159	115,638	29,278	129,668	2,857	3,627		
1921-22	14,117	102,842	120,663	29,693	134,206	2,957	3,379		22.6
1922-23	14,210	99,594	117,686	29,942	131,689	3,088	3,575		26.3
1923-24	14,453	109,082	127,246	29,850	141,502	3,099	3,563		27.9
1924-25	14,457	108,797	126,694	29,776	139,438	3,100	3,557	67	35.3
1925-26	14,696	102,872	121,209	29,884	135,510	3,196	3,584	124	36.4
1926-27	14,993	101,962	120,830	29,654	135,580	3,534	3,884	162	35.4
1927-28	15,246	101,424	120,168	29,675	135,640	3,815	4,192	210	38.4
1928-29	15,698	100,425	119,349	29,953	134,782	4,251	4,660	250	39.2
1929-30	16,060	98,062	116,824	30,246	132,675	4,600	4,967	302	40.0
1930-31	16,272	94,176	113,117	30,449	129,569	4,921	5,426	215	43.5
1931-32	16,306	93,854	112,842	30,648	129,369	4,214	5,220	139	42.8
1932-33	16,253	97,412	116,281	30,724	132,673	4,408	5,167	151	42.6
1933-34	16,200	99,659	118,593	30,986	134,847	4,386	5,079	212	42.9
1934-35	16,086	102,084	121,506	31,123	137,918	3,950	4,629	361	39.6
1935-36	15,909	102,513	122,120	31,262	138,330	3,905	4,463	536	42.7
1936-37	15,757	101,091	120,871	31,321	136,978	4,001	4,578	904	42.3
1937-38	15,451	107,017	127,013	31,277	142,836	4,229	4,736	997	44.3
1938-39	15,297	109,304	129,140	31,280	144,682	4,281	4,724	1,095	43.6
1939-40	15,132	109,920	129,811	31,244	145,979	4,001	4,542	1,075	44.5
1940-41	14,766	109,551	129,663	30,961	144,207	3,777	4,254	1,049	46.3
1941-42	14,554	114,034	134,483	30,565	145,634	3,480	3,975	1,055	45.8
1942-43	14,157	110,879	131,560	27,934	145,443	2,625	3,437	945	n.a.
1943-44	14,023	110,808	131,899	27,826	144,526	1,926	2,761	705	n.a.
1944-45	13,936	113,157	134,398	27,867	137,486	2,289	3,179	725	n.a.
1945-46	13,914	113,617	135,010	27,635	142,505	3,036	3,824	854	42.2
1946-47	13,973	114,162	135,602	28,040	146,173	3,377	3,884	1,112	46.1
1947-48	14,067	114,201	135,503	27,597	142,393	3,377	3,851	1,391	42.6
1948-49	14,142	115,324	136,548	28,110	146,723	3,279	3,757	1,741	48.2
1949-50	14,473	115,630	137,132	27,900	146,563	3,122	3,617	1,792	49.1
1950-51	14,528	115,672	136,956	28,248	151,731	3,252	3,676	1,859	79.1
1951-52	14,447	115,795	137,811	28,698	151,785	3,173	3,696	2,150	58.4
1952-53	14,557	115,843	137,722	28,860	152,689	3,139	3,581	2,322	57.1
1953-54	14,670	118,059	140,008	29,220	150,315	3,336	3,778	2,826	62.1
1954-55	14,791	114,505	136,340	28,092	149,379	3,470	3,895	3,142	69.5
1955-56	14,353	117,085	139,640	28,585	149,965	3,405	3,972	3,499	71.0
1956-57	15,206	117,295	139,727	27,936	149,931	3,400	3,979	3,677	66.1
1957-58	15,342	115,715	138,370	27,971	152,045	3,463	3,907	4,005	81.2
1958-59	15,447	115,111	138,304	28,105	152,312	3,692	4,148	3,716	85.1
1959-60	15,533	121,772	145,377	28,527	155,437	3,679	4,059	3,471	100.9
1960-61	15,681	122,258	145,752	28,711	156,456	4,326	4,966	3,300	102.0
1961-62	15,751	122,122	145,796	28,886	156,897	4,063	4,509	3,583	108.4
1962-63	15,864	123,123	146,807	28,922	156,697	4,415	4,932	3,750	112.8
1963-64	15,961	122,718	146,382	28,711	158,905	4,788	5,380	3,993	117.9
1964-65	16,065	124,043	147,661	28,754	156,954	4,775	5,290	4,714	123.1
1965-66	16,111	126,830	150,422	28,759	159,394	4,869	5,293	5,093	128.8
1966-67	16,523	125,689	149,192	28,957	161,510	5,123	5,737	5,237	138.8
1967-68	16,543	127,269	149,530	29,058	160,765	5,033	5,609	5,130	173.2



RURAL PRODUCTION

Crop Areas and Yields

Year	Cereals for Grain						Hay (a)	Orchards (b) (c)	Vineyards (b)
	Wheat		Barley		Oats				
	Area	Yield per Acre	Area	Yield per Acre	Area	Yield per Acre	Area	Area	Area
	'000 Acres	Bush	'000 Acres	Bush	'000 Acres	Bush		'000 Acres	
1841-42..	4	20.77	1	20.00	1	25.00			
1846-47..	26	20.00	3	30.00	2	20.00			0.1
1851-52..	54	12.65	5	16.49	3	21.79			0.3
1856-57..	162	25.00	8	21.18	3	20.00	23	1.0	0.8
1861-62..	311	10.98	11	15.81	2	20.24	63	1.8	3.9
1866-67..	458	14.34	12	20.13	4	22.29	111	2.2	6.4
1871-72..	693	5.73	17	9.53	4	10.85	98	2.8	5.5
1876-77..	1,084	5.40	10	10.64	3	10.65	92	3.3	4.6
1881-82..	1,769	4.57	12	11.48	3	10.66	333	4.4	4.2
1886-87 (d)	1,970	5.50	17	13.04	8	12.48	317	n.a.	5.3
1891-92..	1,552	4.15	11	9.35	13	6.40	304	8.9	12.3
1896-97..	1,693	1.66	14	7.44	40	4.72	339	11.7	18.3
1901-02..	1,743	4.60	16	15.68	35	13.54	370	16.3	20.9
1906-07..	1,686	10.36	28	17.47	57	15.72	298	18.2	22.6
1911-12..	2,191	9.29	41	17.25	108	12.51	521	23.2	24.0
1916-17..	2,778	16.46	104	16.74	152	12.13	483	28.8	29.2
1921-22..	2,384	10.46	171	19.19	125	10.37	559	32.3	41.4
1926-27..	2,768	12.84	257	18.05	152	11.26	496	31.6	50.3
1927-28..	2,941	8.18	219	13.67	197	7.00	533	31.0	50.7
1928-29..	3,446	7.79	247	18.53	207	8.40	498	30.8	51.8
1929-30..	3,646	6.40	305	15.25	278	5.63	544	30.1	52.3
1930-31..	4,181	8.34	252	15.72	218	9.52	613	29.6	52.2
1931-32..	4,071	11.81	242	18.87	206	11.08	539	29.1	52.5
1932-33..	4,067	10.43	314	19.31	174	10.27	461	29.1	52.5
1933-34..	3,822	9.26	307	17.09	265	7.88	507	28.9	52.9
1934-35..	3,188	8.61	317	17.94	367	6.57	561	29.2	53.4
1935-36..	2,989	10.58	394	16.49	300	7.94	566	29.1	54.2
1936-37..	3,058	9.39	305	13.99	415	5.70	539	29.8	56.1
1937-38..	3,162	13.73	411	21.02	332	8.91	562	29.9	57.4
1938-39..	3,080	10.28	457	16.50	267	9.00	519	28.9	58.0
1939-40..	2,735	15.02	504	19.78	349	11.64	532	29.1	58.2
1940-41..	2,560	6.97	471	10.14	473	3.87	404	29.4	58.4
1941-42..	2,326	13.12	478	24.49	291	13.04	558	29.5	58.0
1942-43..	2,009	18.18	298	20.20	263	12.81	426	29.5	58.2
1943-44..	1,534	13.49	261	19.34	224	10.22	312	25.5	57.3
1944-45..	1,623	5.70	360	8.85	334	3.94	428	26.5	56.9
1945-46..	2,165	9.72	442	17.12	370	8.60	484	27.2	57.4
1946-47..	2,519	11.08	502	16.78	252	11.01	329	28.1	58.2
1947-48..	2,375	13.70	562	27.32	309	17.47	296	28.3	58.9
1948-49..	2,063	12.67	698	17.35	287	9.23	234	29.7	59.8
1949-50..	1,896	14.95	694	18.34	261	13.25	295	26.9	60.3
1950-51..	1,848	16.74	765	21.87	271	13.02	261	28.7	62.0
1951-52..	1,613	16.92	832	20.23	387	13.95	257	29.4	61.2
1952-53..	1,544	21.97	938	27.63	369	18.05	214	28.6	60.6
1953-54..	1,528	19.90	1,122	25.40	280	15.42	262	29.8	62.1
1954-55..	1,689	18.63	1,020	18.02	340	13.27	257	30.5	60.6
1955-56..	1,609	17.96	1,042	23.61	425	17.13	326	33.0	59.9
1956-57..	1,438	21.85	1,222	27.83	427	19.47	299	34.0	57.4
1957-58..	1,331	11.20	1,212	14.48	427	8.01	291	35.3	57.4
1958-59..	1,407	22.76	1,332	28.27	481	24.93	420	37.2	56.7
1959-60..	1,549	7.70	1,290	9.19	505	4.95	245	37.4	56.9
1960-61..	1,969	23.56	1,556	27.15	512	22.41	393	37.7	56.9
1961-62..	2,229	15.19	1,271	16.75	324	13.57	209	38.5	57.8
1962-63..	2,595	14.77	1,053	17.10	416	13.88	287	40.4	58.3
1963-64..	2,802	19.26	1,123	21.67	501	18.27	358	41.7	58.7
1964-65..	2,727	19.37	1,095	24.60	444	20.23	314	43.0	58.9
1965-66..	2,745	14.56	1,098	16.86	455	12.37	299	44.0	58.7
1966-67..	2,960	18.18	1,107	21.41	509	20.19	482	44.2	57.1
1967-68..	2,864	9.39	1,157	10.70	525	6.29	429	45.1	58.1

(a) Wheaten only to 1906-07, thence all kinds.

(b) Bearing and non-bearing.

(c) From 1949-50, private orchards and those no longer worked have been omitted.

(d) Statistics not collected and particulars estimated.

## RURAL PRODUCTION

## Livestock and Associated Produce; Farm Machinery

Year	Livestock Numbers				Wool Production	Milk Production	Slaughtering		Farm Machinery		
	Sheep	Cattle		Horses			Sheep and Lambs	Cattle and Calves	Tractors	Shearing Ma- chines	Milking Ma- chines
		Total	Dairy Cows								
	'000	'000	'000	'000	'000 Lb	'000 Gal	'000	'000	No.	No.	No.
1841-42 ..	250	21		1							
1846-47 ..	681	57		2							
1851-52 ..	1,250	100		7							
1856-57 ..	1,962	273		22							
1861-62 ..	3,038	265		53	13,164						
1866-67 ..	3,912	124		71	19,740						
1871-72 ..	4,412	143		78	25,909						
1876-77 ..	6,133	219		107	42,445						
1881-82 ..	6,804	294		157	48,762						
1886-87 ..	6,542	285		166	50,561						
1891-92 ..	7,646	399	80	189	57,613						
1896-97 ..	6,324	337	84	180	51,936						
1901-02 ..	5,012	225	75	165	44,553						
1906-07 ..	6,625	326	98	207	48,928						
1911-12 ..	6,172	394	122	260	60,345	28,000	1,276	87			
1916-17 ..	5,091	289	114	257	37,534	30,000	686	62			
1921-22 ..	6,257	419	166	268	57,764	41,400	1,208	95			
1922-23 ..	6,305	426	170	268	58,699	42,000	1,291	123			
1923-24 ..	6,597	413	169	264	57,882	47,600	956	140			
1924-25 ..	6,359	400	145	255	62,439	45,400	933	151	882		
1925-26 ..	6,810	373	136	244	69,007	41,400	1,028	155	1,252		
1926-27 ..	7,284	340	127	234	72,365	40,400	1,091	143	1,820		420
1927-28 ..	7,542	316	118	224	78,370	37,900	1,210	142	2,503		389
1928-29 ..	7,080	263	109	206	74,616	35,700	1,263	128	2,979		370
1929-30 ..	6,186	205	104	189	67,301	34,800	1,243	118	3,730		356
1930-31 ..	5,981	219	110	184	63,479	39,000	1,309	90	3,991		367
1931-32 ..	6,609	265	128	185	67,021	50,000	1,379	81	3,992		380
1932-33 ..	7,713	313	149	190	75,728	58,500	1,279	89	4,067		391
1933-34 ..	7,941	353	164	197	79,289	54,400	1,495	104	4,072		389
1934-35 ..	7,885	346	170	199	77,791	53,400	1,591	140	4,122		378
1935-36 ..	7,946	335	174	197	81,709	59,000	1,643	154	4,292		354
1936-37 ..	7,905	328	170	201	76,604	63,700	1,697	166	4,563		409
1937-38 ..	8,904	324	165	197	86,606	69,100	1,589	167	5,312		532
1938-39 ..	9,937	319	165	196	102,888	72,500	2,007	160	5,969		684
1939-40 ..	9,941	351	173	190	105,266	77,300	2,094	151	6,154		829
1940-41 ..	10,263	377	179	182	106,647	78,800	2,164	157	6,351		1,090
1941-42 ..	10,246	399	179	171	105,124	78,900	2,070	154	n.a.		n.a.
1942-43 ..	10,371	424	185	165	108,637	78,600	2,272	171	6,705	2,976	1,659
1943-44 ..	10,360	415	188	154	115,464	78,200	2,480	189	7,064	3,297	1,963
1944-45 ..	8,474	391	187	133	106,708	72,200	3,065	175	8,044	3,770	2,206
1945-46 ..	6,787	374	176	116	73,604	79,400	2,017	148	9,211	3,978	2,349
1946-47 ..	7,959	424	187	109	93,020	93,900	1,662	146	9,456	4,306	2,839
1947-48 ..	9,055	445	197	101	116,450	92,500	1,665	148	9,664	4,932	3,238
1948-49 ..	9,366	461	203	94	114,905	91,300	2,011	189	11,271	5,817	3,665
1949-50 ..	9,477	464	203	83	121,249	89,400	2,317	201	13,709	6,846	4,198
1950-51 ..	10,167	433	184	71	125,384	83,500	2,022	218	16,128	8,134	4,590
1951-52 ..	11,470	437	176	63	135,484	86,500	1,547	216	18,184	9,054	4,909
1952-53 ..	12,037	483	183	57	158,658	84,200	2,353	187	19,750	9,733	5,418
1953-54 ..	11,838	491	192	52	145,509	85,000	2,637	220	20,842	10,302	5,876
1954-55 ..	12,817	524	199	49	155,761	90,700	2,799	233	23,110	11,452	6,363
1955-56 ..	13,585	566	195	44	173,697	90,300	2,358	227	24,345	12,134	6,920
1956-57 ..	14,984	622	195	41	188,808	89,900	2,329	252	26,012	12,690	7,208
1957-58 ..	15,237	597	191	36	185,843	80,600	3,278	283	27,288	13,280	7,344
1958-59 ..	15,634	576	188	33	186,842	82,100	3,145	287	28,532	13,778	7,537
1959-60 ..	14,025	500	170	30	198,289	78,600	3,899	238	28,965	13,973	7,575
1960-61 ..	14,952	561	170	27	177,413	87,000	2,784	174	30,674	14,317	7,589
1961-62 ..	16,415	659	183	26	206,984	95,500	3,140	201	31,788	14,532	7,707
1962-63 ..	15,737	679	190	25	207,344	95,400	3,467	254	31,671	14,595	7,553
1963-64 ..	16,402	694	185	(a)	210,500	97,500	2,996	279	33,231	14,885	7,438
1964-65 ..	17,289	697	182	(a)	215,736	102,300	3,100	275	34,164	15,172	7,328
1965-66 ..	17,993	690	176	(a)	229,633	98,400	3,474	277	33,998	15,386	7,040
1966-67 ..	17,864	687	170	16	237,493	98,700	3,358	265	35,829	15,392	6,634
1967-68 ..	16,405	695	157	(a)	222,667	88,800	4,019	245	36,590	15,758	6,645

(a) Not collected.

MINING AND FACTORY PRODUCTION

Year	Mining				Factories		
	Principal Minerals Produced			Value of Production (a)	Number of Establishments	Value of Land and Buildings, Plant and Machinery	Value of Production
	Copper Ore and Concentrate	Coal	Iron Ore				
	Tons	'000 Tons	'000 Tons	\$'000		\$'000	\$'000
1846.....	6,461			285			
1851.....	7,717			622			
1856.....	11,791			825			
1861.....	11,259			920			
1866.....	23,287			1,657			
1871.....	26,522			1,347			
1876.....	28,145			1,205			
1881.....	25,462			842			
1886.....	18,417			554			
1891.....	16,627		7	551			
1896.....	4,951		—	496			
1901.....	8,605		—	1,079			
1906.....	8,208		75	1,652			
1911.....	5,922		42	900	1,314	11,159	9,148
1916.....	7,279		188	2,504	1,266	12,782	9,748
1921.....	1,532		507	2,086	1,438	17,938	14,556
1922.....	1,185		51	477	1,432	9,607	23,858
1923.....	3,523		384	1,062	1,609	10,843	26,904
1924.....	405		580	1,176	1,698	13,247	29,651
1925.....	570		587	1,342	1,711	14,411	32,144
1926.....	231		584	2,924	1,791	31,685	25,348
1927.....	201		722	3,254	1,807	33,900	27,311
1928.....	192		618	2,755	1,860	36,415	26,975
1929.....	277		848	3,270	1,844	38,633	25,137
1930.....	99		928	2,882	1,814	38,447	21,953
1931.....	22		289	1,297	1,644	37,203	15,510
1932.....	—		538	1,885	1,662	35,314	13,924
1933.....	72		721	2,456	1,710	34,733	15,709
1934.....	207		1,244	3,724	1,733	34,302	17,283
1935.....	256		1,869	5,113	1,803	34,483	19,114
1936.....	451		1,887	5,241	1,895	35,098	23,339
1937.....	340		1,866	5,244	1,916	34,528	24,543
1938.....	254		2,245	6,304	1,980	35,564	27,640
1939.....	110		2,572	7,294	2,067	36,921	27,358
1940.....	308		2,313	7,077	2,265	41,291	28,807
1941.....	605		2,240	7,074	2,230	51,744	33,832
1942.....	392	2	2,122	6,342	2,167	66,948	49,132
1943.....	102	—	2,183	6,287	2,134	70,643	56,732
1944.....	135	35	2,029	6,085	2,149	72,089	56,823
1945.....	134	41	1,520	4,917	2,182	69,665	54,530
1946.....	—	135	1,818	6,101	2,395	74,930	51,203
1947.....	—	193	2,146	7,253	2,707	74,136	62,133
1948.....	4	240	2,035	7,514	2,865	81,861	77,339
1949.....	3	345	1,448	6,236	2,927	90,019	87,443
1950.....	—	261	2,350	8,857	3,046	98,436	104,706
1951.....	2	388	2,401	9,875	3,141	100,123	135,618
1952.....	5	418	2,684	12,094	3,245	121,367	166,493
1953.....	2	448	2,591	12,406	3,339	144,029	178,378
1954.....	3	495	2,867	17,160	3,577	166,735	200,443
1955.....	—	455	3,044	(b) 41,419	3,750	188,555	222,055
1956.....	12	481	3,587	47,853	3,908	223,900	241,872
1957.....	39	609	3,389	46,352	4,063	254,380	253,532
1958.....	52	755	3,353	47,076	4,168	280,840	266,570
1959.....	66	690	3,423	49,332	4,235	302,055	279,620
1960.....	30	885	3,437	50,870	4,684	351,745	325,947
1961.....	8	1,115	3,991	58,242	5,042	401,658	340,123
1962.....	4	1,392	3,510	53,958	5,519	449,600	347,828
1963.....	16	1,512	4,242	62,431	5,766	506,571	379,142
1964.....	54	1,736	4,367	67,597	5,826	560,908	427,356
1965.....	114	2,016	4,392	67,863	5,887	645,469	498,588
1966.....	141	2,021	4,799	72,342	6,065	699,989	527,477
1967.....	1,447	2,045	4,572	69,345	6,222	767,310	563,764

(a) Value at site of production. Quarries included from 1916.

(b) Comparability affected by revaluation of iron ore.

## GROSS VALUE OF RURAL PRODUCTION

Year	Agricultural				Pastoral		Dairying	Total Rural Production
	Wheat	Barley	Vine and Orchard Fruit	Total	Wool (a)	Total		
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1909-10	9,635	239	1,330	14,761	4,394	6,231	1,492	23,365
1910-11	8,419	174	1,572	14,186	4,514	7,087	1,715	24,004
1911-12	7,717	254	1,599	14,965	3,836	5,789	1,693	23,535
1912-13	7,703	466	1,871	15,817	4,232	6,260	1,643	24,841
1913-14	6,210	324	1,632	12,400	3,990	5,865	1,705	21,136
1914-15	2,557	247	1,155	8,203	2,878	3,462	1,601	14,342
1915-16	16,214	521	2,244	24,813	3,260	2,441	1,809	30,117
1916-17	21,729	599	1,653	27,677	4,274	11,200	2,759	42,909
1917-18	13,629	683	2,416	20,583	5,948	12,269	2,874	37,117
1918-19	12,615	1,262	2,859	22,692	7,258	11,774	3,093	39,009
1919-20	13,482	1,451	3,530	27,456	7,332	10,449	3,413	43,193
1920-21	27,407	1,681	3,811	39,963	5,874	11,248	4,666	58,287
1921-22	12,577	1,227	3,491	23,221	5,752	8,296	3,678	37,273
1922-23	14,152	1,364	3,768	26,292	8,688	11,792	3,959	44,226
1923-24	16,124	1,065	3,962	28,312	10,612	15,479	4,970	50,961
1924-25	18,572	1,648	4,399	30,636	11,952	16,276	4,305	53,609
1925-26	17,979	1,656	3,352	28,307	8,591	12,930	4,171	47,629
1926-27	19,052	1,685	4,082	30,181	8,937	12,140	3,895	48,357
1927-28	13,247	1,497	3,394	23,257	11,338	14,584	4,125	44,464
1928-29	12,845	1,737	3,909	23,880	9,308	12,472	3,810	42,375
1929-30	10,243	1,448	3,819	21,059	5,098	8,183	3,892	35,055
1930-31	8,091	893	3,241	15,708	3,608	5,801	3,121	26,335
1931-32	17,163	1,363	3,442	25,291	3,843	5,452	3,421	35,444
1932-33	13,097	1,371	3,463	20,921	4,619	5,834	3,654	32,030
1933-34	10,933	1,280	3,618	19,533	9,013	10,608	3,108	34,776
1934-35	10,318	1,553	3,882	19,965	5,309	7,706	3,091	32,489
1935-36	13,135	1,457	3,953	22,863	8,116	10,885	3,797	39,126
1936-37	14,955	1,766	4,191	26,044	8,720	12,315	4,310	44,366
1937-38	15,665	3,040	4,964	29,453	8,141	11,443	5,291	48,241
1938-39	8,580	2,046	4,056	20,008	7,802	12,327	5,171	39,613
1939-40	16,692	3,524	4,637	30,132	10,470	14,792	5,585	52,487
1940-41	8,379	2,321	4,873	20,167	10,532	14,757	6,079	43,134
1941-42	13,913	4,490	4,725	30,142	10,294	13,875	6,735	53,016
1942-43	19,399	2,709	6,481	35,423	12,359	16,917	7,917	63,091
1943-44	12,765	2,188	9,159	32,088	13,067	18,277	8,807	63,003
1944-45	6,065	1,931	6,283	23,548	11,963	17,928	8,880	54,810
1945-46	17,490	4,956	7,729	40,434	8,275	14,535	9,959	69,399
1946-47	27,685	7,598	8,283	51,209	17,092	22,602	10,950	90,106
1947-48	50,154	26,228	9,677	99,477	32,606	37,487	12,525	155,615
1948-49	32,450	10,242	10,087	64,138	40,268	47,636	13,440	131,527
1949-50	40,834	14,524	10,616	81,707	56,268	63,058	16,148	167,594
1950-51	45,587	19,803	13,720	97,871	132,494	139,895	15,500	259,627
1951-52	45,288	27,706	20,382	120,507	72,394	86,034	21,145	234,587
1952-53	57,302	42,128	19,161	139,160	97,158	109,154	23,527	279,982
1953-54	43,939	28,804	20,788	115,744	88,868	105,950	24,238	254,537
1954-55	41,591	23,243	17,426	104,914	83,204	101,059	25,037	239,022
1955-56	38,514	25,227	20,335	110,570	79,822	100,882	30,826	250,685
1956-57	44,846	34,022	23,265	129,994	114,578	138,118	29,003	305,365
1957-58	20,970	19,573	24,435	90,089	84,708	111,027	26,384	235,337
1958-59	43,791	39,889	23,984	140,858	67,595	99,135	32,103	280,007
1959-60	16,495	10,999	21,394	71,092	85,382	123,351	29,454	231,751
1960-61	68,001	37,977	24,525	161,437	70,484	94,451	30,306	294,087
1961-62	51,515	22,952	27,051	124,022	85,801	111,850	29,848	273,451
1962-63	56,285	19,152	25,857	128,417	92,514	127,386	31,968	295,043
1963-64	77,660	26,399	29,567	165,634	113,409	150,466	34,267	358,802
1964-65	74,550	30,135	36,200	178,132	94,328	135,916	37,533	360,507
1965-66	59,559	20,234	31,411	144,017	103,635	152,224	39,293	345,015
1966-67	79,612	26,912	36,779	184,090	104,588	169,226	40,303	404,864
1967-68	42,186	12,677	31,149	125,914	79,925	129,504	36,757	304,443

(a) Shares of profits from sale of wool under war-time disposal schemes excluded.

## NET VALUE OF PRODUCTION

Year	Rural				Mining and Quarrying (a)	Other Primary (a)	Factories	Total Value of Production
	Agricultural	Pastoral	Dairying	Total				
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1925-26 .....	19,374	11,497	2,988	34,648	2,684	1,537	25,348	64,218
1926-27 .....	19,755	10,697	2,955	34,098	2,924	1,618	27,311	65,950
1927-28 .....	13,661	12,861	3,146	30,858	3,254	1,784	26,975	62,872
1928-29 .....	12,840	10,912	2,721	27,514	2,755	1,639	25,137	57,045
1929-30 .....	10,521	6,795	2,988	21,189	3,270	1,685	21,953	48,098
1930-31 .....	4,368	4,684	2,285	12,051	2,882	1,304	15,510	31,747
1931-32 .....	16,681	4,450	2,435	24,259	1,297	1,357	13,924	40,836
1932-33 .....	12,565	4,775	2,839	20,758	1,885	1,458	15,709	39,809
1933-34 .....	11,820	9,122	2,278	23,768	2,456	1,445	17,283	44,951
1934-35 .....	12,751	6,363	2,242	22,121	3,724	1,460	19,114	46,419
1935-36 .....	14,673	9,205	2,786	27,242	4,739	1,489	23,339	56,809
1936-37 .....	18,115	10,435	3,176	32,270	4,874	1,683	24,543	63,370
1937-38 .....	18,320	9,713	3,782	32,510	4,941	1,758	27,640	66,849
1938-39 .....	10,978	10,110	3,886	25,903	5,909	1,722	27,358	60,891
1939-40 .....	19,482	12,413	4,388	37,412	6,887	1,931	28,807	75,037
1940-41 .....	12,290	12,427	4,204	29,862	6,659	2,062	33,832	72,415
1941-42 .....	19,314	11,559	4,276	36,181	6,595	2,495	49,132	94,402
1942-43 .....	24,495	14,265	6,207	46,688	5,899	2,793	56,732	112,112
1943-44 .....	22,086	15,577	6,991	47,063	5,949	2,961	56,823	112,796
1944-45 .....	13,995	15,391	6,912	39,113	5,870	2,886	54,530	102,399
1945-46 .....	29,935	12,396	7,652	52,640	4,756	3,417	51,203	112,017
1946-47 .....	39,525	19,170	8,484	70,571	5,937	4,124	62,133	142,765
1947-48 .....	83,901	33,861	9,970	131,832	7,037	4,858	77,339	221,066
1948-49 .....	47,901	42,913	10,511	105,545	7,194	5,850	87,443	206,032
1949-50 .....	65,579	57,116	13,637	140,976	5,882	5,814	104,706	257,378
1950-51 .....	72,805	131,594	12,629	221,425	8,375	6,944	135,618	372,362
1951-52 .....	93,807	77,929	17,714	193,792	9,292	8,862	166,493	378,439
1952-53 .....	102,488	99,837	18,854	225,741	10,305	10,363	178,378	424,787
1953-54 .....	83,399	94,847	20,514	203,296	10,075	11,598	200,443	425,412
1954-55 .....	78,361	90,440	21,330	193,795	14,202	11,702	222,055	441,754
1955-56 .....	82,542	89,249	26,547	202,430	(b) 37,302	12,151	241,872	(b) 493,755
1956-57 .....	99,376	124,187	25,022	252,554	43,008	11,966	253,532	561,060
1957-58 .....	64,635	89,726	15,651	173,506	41,249	10,287	266,570	491,612
1958-59 .....	101,141	76,849	18,725	200,694	42,458	11,254	279,620	534,025
1959-60 .....	48,492	100,135	18,281	170,450	44,311	10,694	325,947	551,402
1960-61 .....	116,647	72,237	16,926	208,842	45,773	11,012	340,123	605,751
1961-62 .....	90,933	91,256	19,826	204,484	52,623	10,911	347,828	615,847
1962-63 .....	93,357	103,991	19,741	218,828	49,603	11,574	379,142	659,146
1963-64 .....	125,180	125,979	21,195	274,720	57,836	12,279	427,356	772,191
1964-65 .....	134,239	110,054	25,005	271,350	62,727	14,173	498,588	846,837
1965-66 .....	105,657	123,757	25,127	256,934	62,727	15,817	527,477	862,955
1966-67 .....	137,042	134,608	25,238	300,112	66,909	14,941	563,764	945,726
1967-68 .....	90,057	98,999	21,970	214,970	63,492	15,482	631,104	925,841

(a) To 1934-35, local value, i.e. gross value less marketing costs.

(b) Comparability affected by revaluation of iron ore.

**TRADE**  
**Overseas Exports**

Year	Value of Exports					Proportion of Total Exports Classified by Principal Countries of Destination				
	Total	Wheat and Flour	Barley	Wool	Minerals (a)	Japan	New Zealand	U.K.	U.S.A.	Other Countries
	\$'000	\$'000	\$'000	\$'000	\$'000	%	%	%	%	%
1861.....	1,837	76		1,302	362		3.42	89.46		7.12
1866.....	2,837	146		1,518	1,030		4.62	81.48	2.44	11.46
1871.....	3,630	578		1,948	744		4.00	89.62	n.a.	6.38
1876.....	5,928	2,146		2,884	658		1.96	89.58	0.07	8.39
1881.....	6,311	1,846		3,496	488		0.71	82.03	—	17.26
1886.....	5,877	420		3,508	1,126		0.69	86.90	0.04	12.37
1891.....	11,197	2,728		3,776	3,714	0.01	0.29	80.82	0.90	17.98
1896.....	8,111	222		3,038	3,878	1.38	0.48	56.39	0.28	41.47
1901.....	8,866	2,232		2,208	3,252	0.07	0.65	51.62	0.10	47.56
1906.....	13,742	4,780		3,360	3,574	—	0.26	51.68	0.24	47.82
1911.....	20,350	7,671	2	4,007	6,195	0.04	0.17	45.96	0.13	53.70
1915-16.....	12,272	3,511	19	2,824	4,747	—	1.01	42.92	21.15	34.92
1920-21.....	35,339	28,675	1,175	6,035	828	—	1.11	59.40	1.16	8.33
1921-22.....	29,495	16,281	520	7,051	2,998	1.47	0.71	45.62	2.59	49.61
1922-23.....	27,173	8,779	700	7,794	6,148	2.68	0.69	40.97	3.97	51.69
1923-24.....	33,782	13,754	564	9,289	6,564	8.01	1.53	40.98	2.46	47.02
1924-25.....	38,450	17,234	758	10,140	6,412	2.54	2.99	45.03	1.54	47.90
1925-26.....	38,900	14,825	275	8,865	10,745	6.88	1.70	51.94	1.16	38.32
1926-27.....	34,246	14,189	703	8,297	9,971	2.25	1.47	44.30	0.93	51.05
1927-28.....	36,060	10,831	464	9,788	8,991	2.23	0.58	45.87	1.80	49.52
1928-29.....	29,623	7,822	422	8,463	8,027	0.43	0.58	44.64	1.12	53.23
1929-30.....	30,019	7,734	155	4,487	9,211	3.30	0.63	58.25	1.59	36.23
1930-31.....	20,123	6,078	685	3,006	5,656	2.38	0.81	54.11	0.79	41.91
1931-32.....	24,495	11,803	826	3,243	3,283	3.34	0.75	58.69	0.63	36.59
1932-33.....	25,634	10,450	640	4,579	3,787	7.91	0.65	61.78	0.14	29.52
1933-34.....	25,435	5,463	588	7,526	5,562	4.90	1.24	66.85	0.39	26.61
1934-35.....	23,670	8,279	691	4,881	4,321	7.26	1.58	61.66	0.77	28.73
1935-36.....	30,762	9,020	707	7,561	6,860	6.66	2.05	67.44	1.11	22.74
1936-37.....	33,496	9,890	864	8,144	7,320	2.73	1.52	68.26	2.23	25.26
1937-38.....	38,114	13,848	1,493	6,576	7,909	1.01	1.31	71.37	0.99	25.32
1938-39.....	29,682	6,061	559	7,069	7,107	1.59	2.42	67.76	1.06	27.17
1939-40.....	31,916	4,971	727	10,726	6,317	1.91	1.93	75.40	0.88	19.88
1940-41.....	26,393	8,617	226	6,656	2,606	5.29	3.46	50.46	15.48	25.31
1941-42.....	29,624	3,863	338	11,596	6,220	1.01	3.39	32.02	34.14	29.44
1942-43.....	18,847	4,085	122	6,843	2,084	—	10.61	45.27	15.12	29.00
1943-44.....	31,170	10,504	410	8,509	2,313	—	9.18	40.36	8.61	41.85
1944-45.....	38,334	13,175	115	8,376	5,589	—	6.30	42.34	13.18	38.18
1945-46.....	40,307	7,407	718	14,917	6,550	—	4.95	25.45	26.43	43.17
1946-47.....	65,023	12,304	2,998	16,095	16,138	0.01	5.37	39.47	8.86	46.29
1947-48.....	105,805	24,507	16,030	25,608	17,460	—	4.44	39.01	8.51	48.04
1948-49.....	138,866	38,990	11,952	40,619	24,230	0.07	2.31	44.37	8.04	45.21
1949-50.....	127,864	23,227	10,564	49,621	23,262	2.95	6.38	42.42	7.63	40.62
1950-51.....	215,348	36,852	14,662	109,900	29,893	5.90	2.39	39.58	14.41	37.72
1951-52.....	194,501	42,155	18,035	65,806	42,995	4.60	7.26	39.36	14.65	34.13
1952-53.....	245,897	36,062	30,975	87,135	56,007	8.17	3.32	45.12	12.93	30.46
1953-54.....	220,498	30,518	24,465	78,817	54,059	6.35	5.80	41.66	10.57	35.62
1954-55.....	190,158	24,075	15,794	69,195	50,620	5.05	6.59	40.78	11.57	36.01
1955-56.....	195,332	26,266	14,069	70,063	53,972	6.71	7.47	38.70	10.71	36.41
1956-57.....	245,848	32,558	18,535	98,924	63,707	13.62	7.40	31.73	13.09	34.16
1957-58.....	199,764	24,868	17,183	73,082	50,249	11.23	7.85	31.50	9.32	40.10
1958-59.....	181,831	23,556	20,404	63,278	38,682	13.25	7.86	34.81	8.50	35.58
1959-60.....	181,652	19,028	12,251	74,830	38,085	12.91	4.30	32.08	7.91	42.80
1960-61.....	198,557	36,598	19,219	64,328	44,203	18.11	5.60	27.55	4.71	44.03
1961-62.....	243,975	47,819	23,422	83,107	51,374	14.80	4.14	25.83	8.56	46.67
1962-63.....	212,945	32,603	6,968	83,400	47,555	16.45	4.57	25.87	8.69	44.42
1963-64.....	322,159	76,337	13,828	107,398	63,489	17.59	4.83	26.63	5.99	44.96
1964-65.....	302,242	53,256	15,247	92,535	79,005	17.22	5.06	25.82	7.49	44.41
1965-66.....	296,276	45,864	7,050	94,486	76,896	18.38	5.89	22.81	10.37	42.55
1966-67.....	325,170	55,675	13,056	98,013	78,692	20.43	4.69	15.46	8.85	50.57
1967-68.....	282,767	31,487	2,321	77,008	86,854	21.82	5.04	18.20	11.03	43.91

(a) Rocks, minerals and hydrocarbons, pig iron, pig lead, other lead and lead-base alloys, refined and unrefined silver.

**TRADE**  
**Overseas Imports; Retail Sales**

Year	Value of Imports		Proportion of Total Imports Classified by Principal Countries of Origin				Value of Retail Sales of Goods	
	Total	Metals, Metal Manufactures, and Machinery	Canada	U.K.	U.S.A.	Other Countries	Total Excluding Motor Vehicles etc.	Motor Vehicles etc.
	\$'000	\$'000	%	%	%	%	\$m	\$m
1861.....	2,756	310		80.14	0.32	19.54		
1866.....	4,193	570		89.69	1.80	8.51		
1871.....	2,891	342		81.85	1.45	16.70		
1876.....	6,428	1,084	0.15	81.30	1.44	17.11		
1881.....	7,133	1,022	0.04	79.06	3.80	17.10		
1886.....	5,003	770	0.05	78.90	6.82	14.23		
1891.....	8,063	1,644	0.81	71.36	7.91	19.92		
1896.....	6,475	1,198	0.21	68.59	7.82	23.38		
1901.....	7,854	1,432	0.71	56.91	14.17	28.21		
1906.....	7,965	2,104	1.38	63.10	10.17	25.35		
1911.....	12,492	4,132	1.41	58.60	12.81	27.18		
1915-16.....	10,304	2,816	2.27	47.68	19.81	30.24		
1920-21.....	24,764	6,558	2.96	42.07	21.25	33.72		
1921-22.....	18,094	4,436	3.66	59.89	14.58	21.87		
1922-23.....	21,693	7,636	5.18	52.86	19.75	22.21		
1923-24.....	25,401	9,796	4.24	45.46	27.00	23.30		
1924-25.....	27,941	11,298	3.11	44.79	28.11	23.99		
1925-26.....	28,160	10,602	2.18	43.30	27.84	26.68		
1926-27.....	31,015	12,774	2.29	42.72	29.98	25.01		
1927-28.....	25,019	9,388	1.67	44.51	27.62	26.20		
1928-29.....	22,612	7,908	3.03	42.31	25.88	28.78		
1929-30.....	18,721	5,914	2.33	42.01	26.12	29.54		
1930-31.....	7,833	1,802	2.77	36.96	16.66	43.61		
1931-32.....	5,643	896	4.52	37.88	14.00	43.60		
1932-33.....	7,521	1,140	5.15	35.49	14.34	45.02		
1933-34.....	7,359	1,692	5.07	41.48	14.84	38.61		
1934-35.....	7,931	2,296	5.81	42.91	15.75	35.53		
1935-36.....	10,839	3,616	5.48	38.65	21.16	34.71		
1936-37.....	10,877	3,678	6.55	42.50	15.79	35.16		
1937-38.....	14,948	5,906	7.34	36.49	23.19	32.98		
1938-39.....	11,702	3,924	7.34	37.74	17.13	37.79		
1939-40.....	13,435	3,256	7.49	34.89	14.43	43.19		
1940-41.....	10,924	3,158	5.71	38.09	12.01	44.19		
1941-42.....	14,924	5,164	2.29	28.11	12.36	57.24		
1942-43.....	11,718	3,580	1.45	20.56	14.44	63.55		
1943-44.....	9,562	2,128	1.22	24.97	33.53	40.28		
1944-45.....	9,313	1,388	3.08	24.49	19.91	52.52		
1945-46.....	17,556	3,622	3.19	62.28	10.13	24.40		
1946-47.....	23,875	6,788	7.19	35.25	13.79	43.77		
1947-48.....	45,908	12,740	3.89	37.96	15.45	42.70		
1948-49.....	60,914	21,678	2.36	49.33	9.02	39.29		
1949-50.....	91,509	44,334	1.92	52.15	8.81	37.12		
1950-51.....	112,002	50,446	1.76	48.31	8.42	41.51		
1951-52.....	186,062	80,450	1.72	39.99	9.37	48.92		
1952-53.....	86,549	41,456	4.15	43.53	11.71	40.61	271.7	84.3
1953-54.....	102,945	47,142	7.04	50.63	8.93	33.40	294.4	97.6
1954-55.....	129,607	63,144	4.17	49.18	13.28	33.37	324.4	113.4
1955-56.....	125,504	64,656	3.78	49.17	11.70	35.35	347.8	123.6
1956-57.....	90,813	40,536	5.24	44.01	12.26	38.49	362.3	124.7
1957-58.....	94,205	40,792	4.88	46.37	11.91	36.84	367.2	125.4
1958-59.....	90,693	40,534	6.78	42.08	11.50	39.64	387.2	138.0
1959-60.....	119,493	57,962	5.76	43.89	12.15	38.20	436.6	160.2
1960-61.....	142,764	72,570	6.57	32.66	17.61	43.16	448.9	156.1
1961-62.....	103,386	46,774	6.01	31.95	21.87	40.17	451.6	143.1
1962-63.....	139,826	71,820	6.79	31.83	22.92	38.46	479.9	180.5
1963-64.....	179,651	94,302	5.43	24.75	30.63	39.19	525.3	212.5
1964-65.....	204,856	108,243	5.46	23.72	29.11	41.71	574.5	238.0
1965-66.....	198,156	103,032	5.80	23.32	27.25	43.63	602.0	220.4
1966-67.....	196,771	71,122	4.96	21.64	27.72	45.68	627.0	214.0
1967-68.....	215,619	69,788	8.30	17.29	32.71	41.70	663.0	239.3

## TRANSPORT AND COMMUNICATION

## Public Transport

Year	Railways			Buses and Trams (a)		Civil Aviation		Shipping (Entering S.A.) (b)
	Passengers Carried	Goods Carried	Revenue	Passengers Carried	Revenue	Passengers Carried	Freight Carried	
	'000	'000 Tons	\$'000	'000	\$'000	'000	Short Tons	'000 Net Tons
1841.....								18
1846.....								25
1851.....								75
1856.....	248	32	44					114
1861.....	310	145	185					103
1866.....	425	171	236					169
1871.....	394	228	235					187
1876.....	1,400	387	402					347
1880-81.....	2,902	683	837					641
1885-86.....	3,962	779	1,098					771
1890-91.....	5,296	1,427	2,448					1,288
1895-96.....	5,436	1,057	1,973					1,661
1900-01.....	8,864	1,628	2,473					1,967
1905-06.....	10,715	1,732	2,700					2,785
1910-11.....	16,620	2,731	4,030	34,013	480			3,625
1915-16.....	20,513	2,397	3,931	43,372	649			2,566
1920-21.....	23,788	2,682	5,884	55,324	1,111			2,887
1925-26.....	25,752	3,563	8,524	66,207	1,322			4,526
1926-27.....	25,985	3,687	8,289	67,570	1,350			5,123
1927-28.....	20,881	3,418	7,999	68,546	1,391			4,873
1928-29.....	17,886	2,762	7,237	66,578	1,355			4,640
1929-30.....	17,862	2,669	6,597	59,853	1,513			5,024
1930-31.....	15,453	2,175	5,201	52,756	1,444			4,166
1931-32.....	15,608	2,430	5,514	48,467	1,319			4,139
1932-33.....	16,074	2,401	5,489	48,154	1,287			4,375
1933-34.....	16,325	2,155	5,142	47,021	1,256			4,387
1934-35.....	16,660	2,347	5,339	48,118	1,279			4,974
1935-36.....	17,431	2,482	5,781	50,625	1,347			5,318
1936-37.....	17,777	2,400	6,043	52,082	1,399			5,292
1937-38.....	17,632	2,897	6,598	51,674	1,385			5,711
1938-39.....	17,529	2,661	6,267	52,906	1,422	9	108	5,761
1939-40.....	17,642	2,700	6,367	52,928	1,429	n.a.	n.a.	4,629
1940-41.....	20,360	2,770	7,060	56,518	1,537	n.a.	n.a.	3,047
1941-42.....	28,513	3,128	9,928	69,132	1,891	n.a.	n.a.	2,447
1942-43.....	30,864	3,460	11,665	85,133	2,309	n.a.	n.a.	1,589
1943-44.....	27,356	3,673	12,004	91,312	2,445	n.a.	n.a.	1,814
1944-45.....	24,820	3,502	10,969	95,035	2,563	n.a.	n.a.	1,868
1945-46.....	23,119	2,997	9,794	90,239	2,469	n.a.	n.a.	1,733
1946-47.....	19,827	3,093	9,243	91,238	2,594	160	2,448	3,086
1947-48.....	19,067	3,396	10,219	89,661	2,661	230	3,966	3,651
1948-49.....	18,210	3,544	11,770	82,939	3,084	263	5,573	4,365
1949-50.....	17,385	3,425	(c)13,098	77,999	2,535	266	6,941	5,217
1950-51.....	17,178	3,519	14,715	78,141	3,238	298	8,363	5,283
1951-52.....	18,269	4,966	19,022	75,436	3,684	323	7,745	5,529
1952-53.....	17,565	4,172	24,976	66,571	(d)4,232	295	9,028	5,900
1953-54.....	17,605	4,457	25,848	66,972	4,145	272	11,457	6,108
1954-55.....	16,849	4,497	26,522	66,446	4,267	310	12,514	6,123
1955-56.....	16,434	4,436	26,662	63,515	4,668	329	12,539	6,282
1956-57.....	17,406	4,518	28,132	62,190	4,578	334	12,003	6,360
1957-58.....	17,564	4,166	27,033	60,083	4,988	337	10,143	6,569
1958-59.....	16,805	4,227	26,179	59,613	5,056	402	9,802	6,744
1959-60.....	17,038	4,059	25,652	58,168	5,641	463	9,990	6,745
1960-61.....	15,574	4,537	27,883	58,912	5,515	449	9,254	7,613
1961-62.....	15,176	4,638	27,984	57,950	5,430	446	8,591	7,646
1962-63.....	14,922	4,530	27,826	58,039	5,436	493	9,035	7,886
1963-64.....	15,227	5,213	29,673	58,571	5,473	548	9,621	9,486
1964-65.....	15,196	5,131	29,960	56,434	5,899	671	9,987	9,987
1965-66.....	15,511	4,823	29,137	53,112	6,049	769	11,962	9,517
1966-67.....	15,432	4,909	30,417	49,735	6,270	827	10,641	10,219
1967-68.....	15,242	4,401	28,244	47,813	6,225	n.a.	n.a.	10,028

(a) Buses and trams operated by Municipal Tramways Trust only. Years ended 31 July from 1912 to 1939, 31 January from 1940 to 1952, and 30 June from 1953.

(b) Years ended 31 December to 1913; thereafter year ended 30 June.

(c) Excludes Treasury grant from 1949-50.

(d) Excludes Government grant from 1952-53.



## TRANSPORT AND COMMUNICATION

Year	Motor Vehicles on Register			Drivers and Riders Licences in Force	Telephone Services in Operation (a)	Radio Licences in Force (b)	Post Office Revenue		
	Cars and Station Wagons	Utilities, Vans, Trucks, Buses	Total (incl. Cycles, Scooters)				Postal, Etc. (c)	Tele-graph (c)	Tele-phone
	No.	No.	No.	No.	No.	No.	\$'000	\$'000	\$'000
1851 .....							14		
1856 .....							18		
1861 .....							33	15	
1866 .....							56	24	
1871 .....							58	22	
1876 .....							114	64	
1881 .....							166	123	
1886 .....							214	160	
1891 .....							227	201	
1896 .....							250	242	
1901 .....					1,831		282	263	
1906 .....					2,510		342	182	61
1911 .....					6,086		490	233	93
1916 .....					10,184		484	277	212
1921 .....	13,178		21,407		15,984		762	420	468
1926 .....	42,540	8,189	62,540	79,659	33,547	12,105	867	402	903
1927 .....	50,603	10,961	74,096	88,695	37,132	15,904	929	446	1,026
1928 .....	54,892	12,424	79,637	92,198	40,407	20,247	809	351	1,249
1929 .....	58,227	13,636	85,472	82,973	42,186	23,927	876	360	1,249
1930 .....	(d)50,391	(d)12,327	(d)72,590	94,381	42,868	25,651	871	340	1,266
1931 .....	45,140	12,139	67,324	106,053	39,552	32,075	879	282	1,168
1932 .....	46,558	12,638	68,932	81,300	37,815	43,268	871	273	1,060
1933 .....	46,413	14,197	71,065	89,507	37,339	55,639	913	318	1,064
1934 .....	48,939	17,267	76,676	96,916	37,713	72,337	935	323	1,076
1935 .....	49,496	17,157	77,394	93,258	38,652	81,629	954	337	1,119
1936 .....	53,728	19,415	84,253	92,227	39,911	93,881	1,017	327	1,197
1937 .....	56,101	21,728	88,631	135,320	41,467	105,045	1,048	355	1,280
1938 .....	60,537	24,985	95,735	137,627	43,307	115,571	1,099	375	1,370
1939 .....	59,345	25,740	94,577	138,089	45,224	120,584	1,113	399	1,419
1940 .....	58,184	24,499	91,898	129,950	46,767	127,995	1,140	423	1,515
1941 .....	54,528	24,382	86,172	122,280	47,962	136,457	1,252	458	1,522
1942 .....	53,558	22,583	82,023	106,455	48,747	144,209	1,588	553	1,732
1943 .....	56,608	23,714	86,651	113,556	49,152	153,356	1,858	819	1,957
1944 .....	59,271	24,906	91,316	105,951	50,161	155,046	2,049	816	2,024
1945 .....	61,372	26,959	97,124	117,310	51,266	157,604	2,093	831	2,099
1946 .....	64,370	31,450	107,238	137,979	53,126	164,497	1,921	815	2,170
1947 .....	67,449	34,748	115,226	149,304	56,449	180,371	1,989	875	2,345
1948 .....	75,741	36,364	127,458	159,814	60,249	196,336	2,190	946	2,507
1949 .....	84,331	40,702	143,539	172,063	64,008	211,436	2,345	848	2,761
1950 .....	97,501	45,960	163,888	192,469	69,907	226,723	2,546	1,169	3,536
1951 .....	108,941	51,171	183,553	215,157	74,457	243,019	2,938	1,550	4,271
1952 .....	120,523	55,944	200,449	232,119	80,919 (e)	207,527	3,872	1,818	5,588
1953 .....	129,663	61,224	214,270	252,216	86,977	210,808	4,086	1,191	6,070
1954 .....	139,704	64,621	226,866	265,727	93,104	218,745	4,311	1,112	6,728
1955 .....	150,506	70,193	244,403	281,091	100,171	221,118	4,670	1,028	7,266
1956 .....	161,441	73,174	257,498	299,158	107,649	228,625	5,033	1,075	8,067
1957 .....	171,922	75,693	269,262	315,044	114,390	234,120	5,579	1,358	8,993
1958 .....	184,258	77,823	282,957	328,833	122,311	238,916	5,877	1,385	9,950
1959 .....	200,331	80,962	301,493	340,973	131,060	247,468	6,247	1,421	10,524
1960 .....	214,928	84,143	318,317	369,584	138,019	249,148	7,359	1,487	12,703
1961 .....	224,521	82,456	325,176	393,869	144,502	249,475	7,729	1,643	14,544
1962 .....	238,905	82,463	338,085	397,803	152,785	249,673	7,761	1,434	15,604
1963 .....	258,116	83,686	357,172	414,656	162,012	256,741	8,322	1,592	16,508
1964 .....	278,625	86,005	378,649	439,061	173,314	266,027	8,709	1,852	19,181
1965 .....	295,914	85,949	394,571	447,983	182,249 (f)	269,040	9,312	2,187	23,038
1966 .....	310,969	86,733	409,709	464,778	192,922	281,747	9,759	2,398	24,757
1967 .....	323,951	86,310	422,770	481,496	203,191	278,069	10,117	2,521	26,990
1968 .....	338,527	86,559	438,079	491,765	212,842	290,051	11,378	2,688	30,124

(a) At 30 June from 1916; at 31 December in earlier years.

(b) At 31 December from 1931 to 1943; otherwise at 30 June in years shown.

(c) Years ended 30 June from 1886; earlier years ended 31 December. Telegraph includes telephone to 1901 and radio to 1948, from which time radio etc., licence fees have been excluded from Post Office revenue.

(d) Vehicles in actual use on roads from 1930.

(e) All receivers at the one address covered by one licence from 1952.

(f) Combined radio and television licences included since 1 April 1965.

## PUBLIC FINANCE

Year	State Government					State Taxation (a)	Local Government Revenue		
	Total Revenue	Expenditure		Public Debt			From Rates	Govern- ment Grants	Total
		From Revenue	From Loan (Net)	Total	Per Head				
	\$'000	\$'000	\$'000	\$'000	\$	\$'000	\$'000	\$'000	\$'000
1840-41	51	180							
1845-46	95	77							
1850-51	445	367				202			
1855-56	960	1,160		590	5.50	326		54	114
1860-61	1,117	966		1,733	13.30	282	46	40	114
1865-66	1,900	2,130		1,551	9.20	478	60	60	162
1870-71	1,556	1,519		4,335	23.00	498	80	74	194
1875-76	2,640	2,647		7,674	34.20	920	118	80	286
1880-81	4,344	4,108		22,394	78.30	1,168	188	136	488
1885-86	4,558	4,767	2,800	36,680	118.60	1,603	208	108	502
1890-91	5,464	5,207	968	43,315	135.80	1,655	276	254	702
1895-96	5,043	5,019	886	48,433	137.60	1,600	264	194	652
1900-01	5,648	5,693	845	52,129	146.40	1,203	302	222	738
1905-06	5,612	5,437	900	60,165	165.80	735	348	198	740
1910-11	8,363	7,929	3,752	(b) 56,065	136.50	1,092	481	336	1,004
1915-16	8,714	9,483	4,371	79,049	179.40	1,403	652	302	1,150
1920-21	14,303	15,087	9,351	104,725	210.70	3,244	986	580	1,936
1925-26	20,948	20,922	12,860	160,521	290.10	5,428	1,640	942	3,441
1926-27	21,570	23,669	12,149	173,121	306.40	5,771	1,804	940	3,930
1927-28	22,694	23,244	9,865	181,225	317.20	7,473	1,908	1,031	4,151
1928-29	21,682	23,544	7,056	183,307	323.80	7,536	1,976	1,128	4,206
1929-30	21,102	24,354	4,977	186,838	326.00	6,976	1,942	1,003	3,836
1930-31	21,452	25,079	6,581	199,055	345.70	6,800	1,672	397	2,612
1931-32	20,964	23,091	568	203,198	351.50	6,153	1,584	503	2,627
1932-33	20,321	22,339	7,038	207,415	357.00	5,467	1,572	628	2,798
1933-34	20,376	22,064	3,361	210,839	361.40	5,818	1,574	490	2,659
1934-35	22,003	21,931	1,131	210,699	360.10	6,449	1,210	557	2,194
1935-36	22,819	22,521	2,502	211,397	359.70	6,409	1,665	509	2,824
1936-37	23,479	23,200	1,653	213,188	361.80	7,081	1,674	586	3,078
1937-38	24,922	24,669	1,230	214,901	362.40	7,844	1,745	610	3,232
1938-39	24,607	25,402	843	217,774	365.00	8,232	1,779	768	3,424
1939-40	25,511	25,837	1,253	218,688	365.00	9,127	1,835	686	3,347
1940-41	25,849	26,015	2,548	219,599	365.30	8,683	1,851	577	3,170
1941-42	30,004	27,425	263	218,380	359.00	(c) 9,484	1,909	337	3,017
1942-43	30,385	29,919	Cr. 1,640	216,858	353.70	3,091	1,953	275	3,097
1943-44	31,090	31,059	Cr. 896	216,610	349.60	3,262	1,924	299	3,043
1944-45	32,226	32,226	Cr. 83	217,742	347.00	3,724	1,935	366	3,165
1945-46	32,687	32,687	3,419	221,498	348.80	4,036	2,040	451	3,474
1946-47	34,385	34,506	4,423	228,260	353.20	4,286	2,271	697	4,061
1947-48	37,686	38,312	4,963	237,704	359.50	4,573	2,610	923	4,740
1948-49	43,690	44,259	9,281	249,440	367.20	5,740	2,967	1,106	5,513
1949-50	58,721	59,100	17,339	266,349	375.40	6,591	3,248	1,496	6,380
1950-51	67,344	66,885	33,871	296,776	405.20	8,104	3,830	1,963	7,579
1951-52	85,276	85,098	52,875	346,872	459.40	9,586	4,686	2,578	9,548
1952-53	98,203	98,153	40,885	389,706	502.30	9,983	5,761	2,306	10,800
1953-54	104,751	101,132	39,879	429,446	538.80	13,073	6,524	3,867	13,416
1954-55	103,768	108,236	42,912	472,925	577.10	15,092	7,041	3,836	14,213
1955-56	118,805	121,665	42,666	512,179	603.60	16,150	8,162	4,381	16,310
1956-57	131,522	131,619	43,793	552,880	633.20	18,620	9,563	4,733	18,436
1957-58	141,285	142,083	37,153	593,628	662.00	19,541	10,333	4,848	19,721
1958-59	145,360	147,414	41,442	635,404	690.00	20,435	11,060	4,948	21,080
1959-60	160,555	161,177	43,432	678,210	717.50	22,297	11,971	5,478	22,535
1960-61	172,559	170,182	44,739	722,038	743.20	23,425	13,076	(d) 3,524	25,034
1961-62	186,405	185,392	43,773	763,399	773.10	25,150	14,887	2,984	27,969
1962-63	195,168	194,589	42,047	807,044	798.50	26,940	15,943	3,215	29,094
1963-64	211,006	207,755	44,218	853,553	822.30	29,825	16,968	4,317	33,725
1964-65	222,181	224,803	53,100	902,823	845.70	34,901	18,625	3,804	33,952
1965-66	236,816	243,650	55,089	955,128	872.30	36,852	20,412	4,106	38,020
1966-67	258,823	258,717	57,016	1,013,060	911.50	42,270	22,875	4,244	42,319
1967-68	274,544	277,404	55,382	1,074,959	955.34	45,226			

(a) Excludes all taxation paid to Special Funds.

(b) Debt of Northern Territory and Port Augusta-Oodnadatta railway transferred to Commonwealth.

(c) Uniform taxation in force.

(d) Exclude reimbursement for work done on behalf of Highways Department from 1961.

## PRIVATE FINANCE

Year	Banking			Life Insurance		General Insurance Revenue	Members		
	Cheque Paying Banks		Savings Bank Deposits at 30 June	New Policies Issued Sum Assured	Policies in Existence Sum Assured		Co-operative Societies	Friendly Societies	Building Societies
	Advances (a)	Deposits (a)							
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	No.	No.	No.
1846		183							
1851		426	29						
1856		1,419	106						
1861	2,864	1,480	243						
1866	6,240	2,803	499						
1871	5,715	3,043	982						
1876	9,449	6,632	1,703						
1881	13,483	9,885	2,499						
1886	19,226	9,924	3,306						
1891	16,297	15,550	4,316						
1896	9,470	15,343	5,673						
1901	8,546	13,437	7,591						
1906	10,612	15,598	9,534						
1911	16,970	22,257	14,872				10,248		9,572
1916	20,325	27,264	20,070				13,270	65,540	8,962
1921	27,296	44,199	32,635	6,000	40,272	1,305	28,762	70,155	10,621
1926	31,672	51,574	43,558	9,341	60,244	2,045	41,539	77,791	17,011
1927	38,159	53,555	47,202	9,666	63,689	2,285	42,386	78,422	18,003
1928	38,612	52,572	49,883	9,800	67,108	2,246	44,000	78,284	19,208
1929	46,161	46,045	50,457	9,297	69,469	2,216	45,176	77,785	19,161
1930	47,412	44,869	48,024	8,132	68,312	2,007	45,346	76,363	16,663
1931	44,119	44,956	42,844	6,266	65,016	1,627	45,791	(b)	14,081
1932	41,232	48,503	43,134	7,060	64,905	1,640	47,189	72,133	11,869
1933	42,198	49,571	45,031	7,556	66,083	1,652	42,614	71,275	10,814
1934	42,524	51,633	46,875	7,847	67,785	1,651	42,746	70,881	9,713
1935	44,285	51,269	48,370	9,160	71,130	1,698	44,080	71,043	9,617
1936	43,760	52,399	50,617	10,791	75,984	1,859	45,592	71,658	9,257
1937	41,957	57,751	53,012	12,511	82,328	2,127	49,456	73,131	9,418
1938	44,244	58,720	54,487	12,070	87,769	2,434	52,064	74,703	10,364
1939	45,019	58,680	54,794	11,434	92,583	2,527	53,320	74,486	10,569
1940	41,697	61,792	53,127	10,090	96,387	2,584	53,943	75,481	10,532
1941	39,547	64,182	55,019	11,416	101,825	2,643	n.a.	76,357	n.a.
1942	36,082	73,975	61,232	9,812	106,429	2,802	n.a.	77,233	n.a.
1943	32,574	86,491	77,126	10,783	112,590	2,706	n.a.	78,600	n.a.
1944	31,328	100,201	97,184	13,417	121,736	2,604	n.a.	79,530	n.a.
1945	31,970	108,498	113,991	14,816	130,764	2,602	64,924	80,403	16,894
1946	31,560	93,397	131,729	22,805	147,230	2,705	70,620	80,419	18,665
1947	39,674	99,653	135,800	24,935	165,025	3,372	80,150	79,827	19,774
1948	39,585	119,859	147,226	26,555	183,753	4,371	84,470	78,246	20,815
1949	41,387	142,558	162,351	29,003	204,289	5,755	87,733	76,761	22,017
1950	50,412	159,136	175,390	33,076	227,616	7,312	92,066	75,168	22,646
1951	62,109	206,743	195,698	44,899	261,931	9,298	92,424	71,591	22,782
1952	89,163	214,630	207,452	48,475	298,494	12,370	96,134	67,563	23,016
1953	79,574	247,260	227,750	51,671	335,457	14,593	100,323	63,922	23,801
1954	95,968	250,802	245,898	59,540	377,093	16,165	107,069	61,345	23,814
1955	106,740	250,795	263,384	70,458	426,881	18,321	109,667	59,149	24,397
1956	108,515	241,044	271,512	75,301	477,554	20,590	114,018	57,216	24,266
1957	105,618	266,897	284,802	89,470	539,120	23,835	109,636	55,499	(c)
1958	125,971	262,700	297,716	94,137	599,723	24,656	(c)	54,181	24,321
1959	124,924	272,599	314,304	111,440	676,406	26,223	112,844	53,114	24,665
1960	149,172	265,498	331,996	131,951	756,581	27,975	116,645	52,239	24,847
1961	147,348	269,848	333,485	143,628	841,563	32,363	111,031	51,551	24,835
1962	161,308	281,496	361,980	157,636	937,635	33,740	116,405	51,198	21,854
1963	181,162	290,892	416,155	165,183	1,034,471	37,499	108,283	50,765	21,260
1964	199,816	328,484	475,803	197,790	1,161,922	41,695	113,224	50,946	22,348
1965	239,123	352,411	519,268	215,946	1,294,378	45,433	115,828	51,258	22,746
1966	271,132	371,362	558,857	239,250	1,438,998	50,121	120,042	51,109	23,611
1967	292,328	378,401	605,167	279,996	1,618,024	56,114	129,230	51,001	23,722
1968	340,117	393,175	643,690			59,981	129,064	51,070	22,458

(a) Weekly average of balances during June quarter of year stated.

(b) Membership at 30 June from 1932, previously 31 December.

(c) Balance dates of societies do not coincide; from this year figures are aggregates of members at balance dates within the year ended 30 June.

## APPENDIX B

### PRINCIPAL EVENTS

#### CHRONOLOGICAL LIST OF IMPORTANT EVENTS IN SOUTH AUSTRALIA SINCE 1836

- 1836**—First migrants landed at Kangaroo Island on 20 July. First South Australian newspaper published in London. Colony's first school opened on Kangaroo Island. The Surveyor-General, Col Light, arrived in November and commenced survey of Adelaide. Governor Hindmarsh arrived in H.M.S. *Buffalo* and proclaimed South Australia a Province on 28 December.
- 1837**—Col Light completed survey of Adelaide and designed the city's present layout. First Adelaide land allotments made. First newspaper published in South Australia. South Australian Supreme Court established. First hospital opened in North Terrace, Adelaide.
- 1838**—First overland cattle and sheep drives from New South Wales. First export from South Australia, a small clip of wool, dispatched. First German settlers under the leadership of Pastor Kavel arrived in South Australia. Formation of first police force.
- 1839**—Col Light died at Thebarton and buried in Light Square. First road in South Australia built between Adelaide and Port Adelaide. Adelaide Chamber of Commerce founded.
- 1840**—Eyre started overland journey to Western Australia. The Municipality of Adelaide incorporated, the first in Australia. McLaren Wharf, Port Adelaide, opened by Governor Gawler.

- 1841**—First South Australian mine (silver-lead) opened near Glen Osmond. Assisted migration suspended because of depression. Following financial crisis Governor Gawler recalled and succeeded by Governor Grey. Eyre arrived at Albany in Western Australia.
- 1842**—Registration of births, deaths and marriages commenced. Portions of South Australia divided for first time into counties. Copper discovered at Kapunda. Legislative Council constituted. The South Australian Board of Colonisation Commissioners abolished by the British Government.
- 1843**—Stripper invented by Ridley. A flour mill built at Hindmarsh.
- 1844**—First Colonial Census held, and showed a population of 17,366.
- 1845**—Copper discovered at Burra. Sturt explored the north-eastern part of the State. Gold found in South Australia, near Montacute. Assisted migration resumed.
- 1846**—First pastoral leases granted.
- 1847**—First winery in the Barossa Valley commenced operation. St Peters College established.
- 1848**—Opening of The Savings Bank of South Australia. First ferry across the River Murray commenced operations at Wellington.
- 1849**—The Central Board of Main Roads established.
- 1850**—An Act granting representative government to South Australia passed by the British Parliament.
- 1851**—The Central Board of Education set up.
- 1852**—First overland gold escort arrived in Adelaide.
- 1853**—W. R. Randell's *Mary Ann* and Francis Cadell's *Lady Augusta* initiated the navigation of the Murray.
- 1854**—State's first railway (horse-drawn) built from Goolwa to Port Elliot.
- 1855**—First South Australian postage stamps issued.
- 1856**—First telegraph line opened from Adelaide to Port Adelaide. The new Constitution Act embodying the principle of responsible government proclaimed; it provided for Parliament to consist of two Houses; a Legislative Council and a House of Assembly. First steam railway from Adelaide to Port Adelaide constructed. Population of the State passed 100,000.
- 1857**—Railway to Smithfield and Gawler opened.
- 1858**—The Real Property Act, which embodied the principles of conveyancing formulated by Torrens, came into operation. First telegraph line to Melbourne opened.
- 1859**—A jetty over 1,200 feet in length constructed at Glenelg. Copper discovered at Wallaroo.
- 1860**—Water supplied to the City of Adelaide by means of a main connected with the reservoir at Thorndon Park.
- 1861**—Copper discovered at Moonta. Water laid on to houses in Adelaide. John McDouall Stuart set out to cross the continent from south to north. The South Australian boundary shifted west to coincide with the boundary of Western Australia.
- 1862**—Stuart reached Chambers Bay on the coast of the Northern Territory.

- 1863—Administration of the Northern Territory taken over by South Australia. Shops of Adelaide lit for the first time with gas.
- 1865—Annual leases of pastoral lands sold by auction for first time. The Bank of Adelaide founded.
- 1866—Camels for the purposes of exploration introduced by Sir Thomas Elder. The Adelaide Town Hall opened.
- 1867—Visit of Alfred, Duke of Edinburgh, who laid the foundation stone of the General Post Office.
- 1869—Foundation stone of St Peters Cathedral laid. Prince Alfred College opened. Adelaide Chamber of Manufactures founded.
- 1870—Construction of the transcontinental telegraph from Port Darwin commenced. John Forrest and party made first of two journeys of exploration from Perth.
- 1872—Transcontinental telegraph from Port Darwin completed and first direct telegram from London received.
- 1873—Eight-hour working day adopted. First Health Act, establishing a Central Board of Health, passed.
- 1874—The University of Adelaide founded.
- 1875—The State Education Act passed. First Forestry Board established.
- 1876—Telegraph communication with New Zealand established. The Smith brothers invented the 'stump jump' plough. South Australia became first State to give legal recognition to trade unions.
- 1877—Overland telegraph line from Port Augusta to Eucla completed and first telegram from Perth transmitted. The Adelaide Bridge completed.
- 1878—Provisions of the Education Act relating to compulsory school attendance brought into force in the Adelaide school district. First tramway (horse-drawn) in any Australian city commenced carrying passengers to Kensington and North Adelaide. The State's population passed 250,000.
- 1879—Foundation stone of the Adelaide University laid. First bridge across River Murray in South Australia opened at Murray Bridge.
- 1881—First reclamation of swamp areas of River Murray. Art Gallery opened by His Royal Highness Prince Albert Victor. Construction of the weir which created the Torrens Lake completed.
- 1882—Establishment of Fire Brigades Board.
- 1883—The Telephone Exchange commenced operations. Roseworthy Agricultural College opened to students.
- 1884—Largs Bay Fort opened. Adelaide Trades and Labor Council, the first delegates society, inaugurated.
- 1885—Broken Hill silver mines opened. Column erected on Mount Lofty summit as a prominent landmark for mariners.
- 1887—Act authorising payment to members of Parliament passed. Renmark Irrigation Colony established. First express trains ran between Adelaide and Melbourne. The Jubilee Exhibition opened. Stock Exchange of Adelaide formed by amalgamation of Adelaide Stock Exchange and Stock Exchange of South Australia.
- 1888—Totalisator legally authorised by an Act of Parliament.
- 1889—The School of Mines and Industries opened. Smelting of silver-lead ore from Broken Hill commenced at Port Pirie.

- 1890—First South Australian built locomotive completed.
- 1892—Education made free to the compulsory age and standard.
- 1894—Act granting the franchise to women passed by Parliament. Inauguration of industrial arbitration by the establishment of Boards of Conciliation.
- 1896—State Bank of South Australia opened. Women voted for the first time at the general election. Happy Valley Reservoir opened. One of Adelaide's most severe droughts commenced, and continued for several years.
- 1899—Second referendum concerning the establishment of Federation held. In South Australia, 65,990 electors voted for federation and 17,053 against. First military contingent left South Australia for the Boer War.
- 1900—Adelaide lit for the first time with electric light. The Commonwealth of Australia Constitution Act received Royal Assent and a Proclamation was issued uniting the States as the Commonwealth of Australia as from 1 January 1901. Conservatorium of Music opened. First Workmen's Compensation Act passed.
- 1901—Early closing of shops introduced. First Commonwealth Parliament elected. The Duke and Duchess of York arrived in the *Ophir*. The Commonwealth Customs Act came into force. The Electric Light Works was opened. Iron Knob connected to Whyalla by railway.
- 1902—Flinders column, at Mount Lofty, dedicated to the public by the Governor, Lord Tennyson.
- 1905—First kindergarten in South Australia opened.
- 1906—Military cadet system inaugurated.
- 1907—High schools were established in a number of country centres. Municipal Tramways Trust incorporated. First Commonwealth basic wage judgement—the 'Harvester' award—made.
- 1908—Penny Savings Bank accounts for children established. The Outer Harbor opened. Adelaide High School established.
- 1909—Adelaide Electric Tramways commenced operations. Payment of old age pensions by the Commonwealth commenced.
- 1910—Payment of invalid pensions by the Commonwealth commenced. First recorded monoplane flight in Australia made by F. C. Custance at Bolivar.
- 1911—'Penny Postage' to all parts of the British Empire introduced. The Federal Defence Act came into operation. Administration of the Northern Territory transferred to the Commonwealth.
- 1913—Medical inspection of school children introduced. Commonwealth Bank formally opened. Metropolitan Abattoirs established.
- 1914—First South Australian military expeditionary force embarked at Outer Harbor. South Australia experienced its most severe drought.
- 1915—Prices of commodities fixed by a commission. A referendum approved the closing of liquor bars at 6 p.m. Women appointed as justices of the peace for the first time. First shipment of iron ore made from Whyalla to steelworks in Newcastle. First women police appointed. Opal discovered at Coober Pedy.
- 1916—Referendum proposing compulsory military service abroad defeated. First Public Service Commissioner appointed. First State living wage with general application declared.

- 1917—German private schools in South Australia were closed. East-West trans-continental railway completed and the first train ran to Perth. Mr. R. G. Carey, in a Bleriot 60, made the State's first airmail flight from Enfield to Gawler.
- 1918—Wool clip purchased by the British Government at a flat rate of 13c per lb.
- 1919—Captain Butler flew from Adelaide across Gulf St Vincent carrying airmail to Minlaton. Soldier Settlement Bill passed by the South Australian Parliament. First Lord Mayor of Adelaide elected.
- 1920—Sir Ross Smith and party arrived at Adelaide by non-stop flight from Melbourne. Peace Exhibition held at the Jubilee Exhibition Buildings. The Prince of Wales visited South Australia.
- 1921—The State's population passed 500,000.
- 1922—First lock on the River Murray completed and opened at Blanchetown.
- 1923—The Government approved an extensive re-organisation of the railway system.
- 1924—Public Debt Commissioners were appointed. Air mail between Adelaide and Sydney inaugurated. Waite Agricultural Research Institute established. First radio stations commenced broadcasting.
- 1925—Show Grounds at Wayville opened. The first Commonwealth election at which voting was compulsory took place. Foundation stone of Adelaide Teachers Training College laid.
- 1926—The South Australian barley exhibit won all prizes at the Brewers Exhibition in London. The State Bank opened for general banking business. Construction of a 3ft 6in gauge railway from Oodnadatta to Alice Springs approved. State petrol tax declared invalid following a Commonwealth writ against the State.
- 1927—Extension of the North-South railway commenced. The first train arrived at Renmark following the opening of the Paringa Bridge. The Duke and Duchess of York arrived in South Australia.
- 1929—The first air mail left Adelaide for Perth. The first train to Alice Springs left Adelaide. Compulsory military training abolished and replaced by a voluntary system. Electric tram service to Glenelg commenced.
- 1930—All officers of the South Australian Public Service over the age of sixty-five years were compulsorily retired. The South Australian basic wage was reduced by 18c to \$1.25 per day. Transport Control Board, State Finance Committee and Unemployed Relief Council established.
- 1931—City Bridge opened. Financial Plan formulated at the Premiers' Conference adopted and Financial Emergency Act passed. Commonwealth basic wage reduced by 10 per cent for twelve months but was to be adjusted in accordance with a retail price index. State basic wage reduced from \$1.25 to \$1.05 per day. Basic wage for females reduced, first from \$3.95 to \$3.50 and later to \$3.15 per week.
- 1932—Boundaries and names of a number of local government areas changed and others abolished following the report of a commission.
- 1933—Wool auction values for the season rose 6c to 12c per lb. The Farmers Assistance Board, the Betting Control Board and the Metropolitan and Export Abattoirs Board established.
- 1934—Water restrictions in force from May until the following January.



- 1935**—The Nomenclature Act of 1935 restored the former German names to a number of towns whose names had been changed in 1917.
- 1936**—Centenary year of the State's foundation celebrated. Contract signed for the completion of Parliament House and the foundation stone laid by the Governor, Sir Winston Dugan.
- 1937**—South Australian Housing Trust established. New Commonwealth basic wage of \$7.40 per week which incorporated a 'prosperity' loading declared. First trolley bus service inaugurated. Mount Bold reservoir with a capacity of 6,662 million gallons filled, almost doubling Adelaide's water storage. Schools closed and other precautions taken as a result of an epidemic of poliomyelitis.
- 1938**—First South Australian Housing Trust dwelling completed.
- 1939**—State's worst heat wave and disastrous bush fires experienced during the first two months of the year. Record high temperature of 117.7°F recorded in Adelaide. New Parliament House opened by His Excellency the Governor-General, Lord Gowrie.
- 1940**—Goolwa Barrage completed at a cost of \$1,400,000. Birkenhead Bridge opened. A rapid development of secondary industry took place as munition annexes were added to existing factories and new factories were opened.
- 1941**—Scriptural instruction in State schools commenced. First naval vessel built in South Australia launched. First blast furnace to be built at Whyalla went into operation. Child endowment payments inaugurated. Pay-roll tax commenced.
- 1942**—Daylight saving of one hour introduced for almost three months. Wages and prices pegged and profits and interest rates restricted. Racing and bookmaking prohibited. Rationing of tea, liquors and clothing commenced. Widows pensions instituted. The uniform Income Tax Act came into force. First coal obtained from Leigh Creek.
- 1943**—Price stabilisation legislation came into force. Butter rationing commenced. Wage and price subsidies were introduced and the prices of tea, potatoes and other commodities were reduced in order to bring price indexes and wages to a lower level. Racing resumed but betting shops remained closed.
- 1944**—Rationing of meat began. Morgan-Whyalla pipeline officially opened. The first State election with compulsory voting took place. Severe water restrictions imposed. First output of Leigh Creek coal for electricity generation.
- 1945**—Unemployment and sickness benefits came into operation. Restrictions imposed on the use of gas and electricity for domestic and industrial purposes.
- 1946**—Commonwealth munition factories taken over by various private firms. Payment of government subsidies to hospitals commenced. Restrictions on the use of gas and electricity again imposed. The South Australian Electricity Trust took over the property and functions of the Adelaide Electric Supply Co.
- 1947**—Fruit fly detected in metropolitan orchards and efforts made to eliminate it by stripping gardens and orchards. Sugar rationing abolished. Conciliation commissioners appointed following an amendment to the Commonwealth Conciliation and Arbitration Act. Severe restrictions imposed on imports from North America.

- 1948**—Restrictions on the use of gas and electricity imposed on a number of occasions during the year because of the shortage of coal. Preparation of the Woomera rocket range commenced. Forty hour working week introduced by Arbitration Court award. Serious bush fires occurred in January. Severe storms during April resulted in widespread damage including the destruction of the Glenelg jetty. Referendum on Commonwealth price control defeated. The free medicine scheme came into operation. Clothing and meat rationing abolished. Control of prices handed to the States by the Commonwealth. Full-scale production of the 'Holden' car commenced.
- 1949**—Petrol rationing by the Commonwealth declared illegal but resumed later in the year under a State Act. An extended national coal strike occurred. Water pipeline to the Woomera rocket range completed. The Commonwealth and South Australian Governments ratified an agreement for the standardisation of railway gauges.
- 1950**—Petrol, butter and tea rationing discontinued. Commonwealth free drugs scheme came into operation. Basic wage increased by \$2 per week. Water restrictions imposed in December and remained in force until June 1951.
- 1951**—Serious bush fires occurred in January. Wool prices reached a record high level. Distribution of free milk to school children introduced.
- 1952**—The hospital benefits scheme came into operation. Price control on clothing removed in South Australia. Severe import restrictions gazetted. Installations for the bulk handling of grain opened at Ardrossan. Compulsory Chest X-rays introduced.
- 1953**—Remaining controls on building removed. Port Pirie became the first country town to be proclaimed a city. The medical benefits scheme came into operation. Automatic quarterly cost-of-living adjustments to the basic wage discontinued. Size of the State Cabinet increased from six to eight Ministers.
- 1954**—A severe earthquake occurred in Adelaide on 1 March. Her Majesty Queen Elizabeth II visited South Australia. First unit of Port Augusta power station opened. Construction of dwellings in Elizabeth commenced. Radium Hill mines and treatment works officially opened. Water from the River Murray pumped into metropolitan reservoirs through the Mannum pipeline.
- 1955**—Adelaide Airport at West Beach opened. Mannum-Adelaide pipeline officially opened. The sulphuric acid plant at Port Adelaide commenced operations. Uranium treatment at Port Pirie also commenced. The new satellite town at Elizabeth officially opened.
- 1956**—River Murray flooded for several months and caused considerable damage in irrigation and reclaimed areas. Town Planning Committee established. Pyrites plant at Nairne opened. Charges for beds in public wards at the Royal Adelaide Hospital made for the first time. Atomic device exploded at Maralinga. Salk poliomyelitis vaccination programme commenced.
- 1957**—Centenary of responsible government in South Australia celebrated. Long service leave legislation passed by the South Australian Parliament.
- 1958**—Visit of Queen Elizabeth the Queen Mother, to South Australia. Introduction of parking meters to Adelaide. South Para reservoir opened and connected to Adelaide water supply. Final run by a street tram in Adelaide, following conversion to diesel bus transport.

- 1959**—South Australia ceased to be a claimant State for special grants from Commonwealth Grants Commission. Full-scale television transmission commenced. Sir Thomas Playford completed a record term as Premier in a British country (26 years 125 days). Aborigines became eligible for age, invalid and widows pensions.
- 1960**—Closing of banks on Saturday mornings. First Adelaide Festival of Arts held (March 12-26). Discovery of high grade limesand deposits near Coffin Bay. Completion of second unit and formal opening of Thomas Playford power station at Port Augusta.
- 1961**—First United Kingdom Trade Commissioner appointed to South Australia. Compulsory driving tests introduced. The trailer ship *Troubridge* made its first run from Port Adelaide to Kingscote and Port Lincoln. Sturt's Desert Pea declared State's official floral emblem. Post trading replaced call system at stock exchange.
- 1962**—Tanker *P. J. Adams* of 32,000 tons—the largest ship built in Australia to this time—launched at Whyalla. Deliveries of bulk wheat from farms exceeded the quantity of bagged grain for the first time. Myponga Reservoir completed and linked to Happy Valley Reservoir. Duplication of Morgan-Whyalla pipeline commenced. World record price of \$26,250 paid for a Merino ram at Adelaide Royal Show.
- 1963**—Population of the State passed 1,000,000 mark. Port Stanvac oil refinery 'on stream'. School leaving age increased to fifteen years. Three weeks annual leave for employees governed by State awards and determinations introduced. Ratifying legislation passed for construction of Chowilla dam. First direct dialling for an overseas telephone call from South Australia. Major gas flow from Gidgealpa No. 2 well. Royal visit by Her Majesty, Queen Elizabeth II.
- 1964**—Work commenced on conversion of Port Pirie-Broken Hill railway to standard gauge. First gas from Port Stanvac refinery piped for use in Adelaide's gas supply. Record wind gust (92mph) and all-time low barometric reading (29.09 inches) registered at Adelaide on 12 July. New world land speed record set by Donald Campbell on Lake Eyre.
- 1965**—Tenders called for first on-site construction work for Chowilla dam. Election of first Labor State Government since 1933. First country television station opened at Port Pirie. Steel works including a basic oxygen steel making plant opened at Whyalla. First tenders let for Torrens Island power structure. First woman judge in Australia appointed to Supreme Court of South Australia. Size of the State Cabinet increased from eight to nine Ministers.
- 1966**—Women sworn in for jury service for the first time. The Flinders University of South Australia at Bedford Park officially opened by Queen Elizabeth, the Queen Mother. Second major natural gas strike in Gidgealpa area. New outlet tunnel 9,000ft long from Happy Valley Reservoir completed. ELDO rocket Europa-1 launched at Woomera. Industrial Commission of S.A. replaced the S.A. Board of Industry. Contract let for 700ft diversion tunnel at site of Kangaroo Creek dam. The 55,000 ton bulk ore carrier *Bogong* launched at Whyalla.

- 1967**—Approval obtained for loans totalling \$35 million to build a natural gas pipeline from Moomba-Gidgealpa to Adelaide. Totalizator Agency Board operated off-course in South Australia for the first time. First South Australian lottery drawn. Commonwealth Basic Wage superseded by Total Wage concept. Liquor trading hours extended to 10 p.m. WRESAT-1, first Australian orbital satellite launched from Woomera. New record low annual rainfall for Adelaide (10.11 inches). Zinc deposits discovered near Beltana. Torrens Island power station commenced operations. First off-shore drilling rig—*Ocean Digger*—constructed and launched at Whyalla.
- 1968**—State elections held, Labor Government returned but subsequently defeated on the floor of the House at the first meeting of the new Parliament. New Liberal Premier, Mr. R. S. Hall sworn in. Four weeks leave for State Government employees introduced. *Ikara* anti-submarine missile training centre commissioned at W.R.E., Salisbury. Construction commenced on State's first satellite communications station at Ceduna. Construction of a new \$12.9 million hospital at Modbury approved. The 55,000 ton bulk ore carrier *Iron Hunter* launched at Whyalla. Contract let for construction of pipeline from Moomba-Gidgealpa gas field to Adelaide. Extensions to plant at Whyalla steel-making works at estimated cost of \$3 million. Ninth International Conference of Soil Science held in Adelaide. Metropolitan Adelaide Transportation Study report released. Iron ore pellet plant at Whyalla in full operation with first shipment of pellets under \$104 million contract to Japan. New Victoria Square shopping centre opened. Marked increase in State Taxation. Legal drinking age lowered from twenty-one to twenty. First computer-processed electoral roll produced. Sealed highway from Broken Hill to Adelaide opened. Plans announced for underground retail trading centre in the heart of Adelaide. Contract let for building of new teachers college at Strathmont. Retail sales of beer, wine and spirits in South Australia \$72 million for 1967-68 a record. Sir James Harrison first Australian-born governor of South Australia sworn in.
- 1969**—Work commenced on new multi-million dollar shopping centre at Modbury. Licence issued for new radio station at Port Lincoln. Work begun on second major pipeline to bring River Murray water to Adelaide. Contract let for \$9.5 million oil tanker of 62,000 tons to be built at Whyalla. Chowilla dam project deferred indefinitely. New zone of natural gas discovered 38 miles south-east of Moomba field. Salaries of State Members of Parliament increased by \$1,000 per annum. Natural gas pipeline of 487 miles from Moomba-Gidgealpa to Adelaide completed. Proposed implementation of M.A.T.S. proposals revised extensively. Forty-first Congress of the Australian and New Zealand Association for the Advancement of Science held in Adelaide.

## APPENDIX C

### RECENT INFORMATION

In this section details are given of some important developments which have occurred recently.

More up-to-date statistics than those shown in this volume are regularly incorporated in various statistical publications as they become available. A List of Publications is set out on page 647.

#### PART 1—NATURAL ENVIRONMENT

*Weather Conditions in South Australia* (pages 16-17)—Following useful summer rains, the north-west and north-east districts and adjacent parts of the Far North recorded between one and a half times and twice normal rainfall during autumn. The remainder of the pastoral areas as well as the settled areas received close to or just above normal rainfall.

Warm weather continued into the early part of autumn, but later day temperatures were normal. Night temperatures followed a similar pattern with a few frosts occurring towards the end of the season.

#### PART 3—CONSTITUTION AND GOVERNMENT

*Number of Members and Electorates* (page 66)—On 25 September 1969 the Electoral Commission, appointed early in 1969 to divide the State into forty-seven electorates, submitted its final report to Parliament. Twenty-eight of the proposed electorates are in the newly defined Metropolitan Area, the remaining nineteen being in the country.

#### PART 6—SOCIAL ENVIRONMENT

*Education* (pages 152-83)—Among increased allocations for education in the Commonwealth Budget presented on 12 August 1969, independent schools are to be subsidised from 1 January 1970 at the rate of \$35 per annum a primary pupil and \$50 per annum a secondary pupil.

*Commonwealth Pensions and Benefits* (pages 234-47)—The 1968-69 Commonwealth Budget raised aged, service, widows and other social welfare pensions and varied the means test governing these pensions. At the time of going to press the necessary legislation had not been enacted.

### PART 7—LABOUR

*The Work Force* (pages 270-1)—Preliminary estimates of the civilian labour force of Australia, an extension of the statistical series formerly including the six State capital cities, include for the first time quarterly measures of the participation of married women in the labour force. The following table indicates the increasing proportion of married women in the Australian labour force between August 1966 and August 1968, together with average hours worked and the unemployment rates for married women in the labour force.

**Married Women in the Australian Labour Force<sup>(a)</sup>**

August	Employed			Unemployed	
	Number ('000)	Per Cent of Married Female Civilian Population	Average Hours Worked	Number ('000)	Per Cent of Married Female Labour Force
1966.....	742.5	27.8	31.9	14.7	2.0
1967.....	797.6	29.3	32.1	18.7	2.3
1968.....	851.2	30.5	31.5	18.7	2.2

(a) Civilian females aged 15 years and over.

*State Industrial Tribunals* (pages 278-80)—The burden placed upon the President of the Industrial Court by his appointment also as Public Service Arbitrator led to an amendment to the Industrial Code in March 1969 creating a position of Deputy President of the Industrial Court. The Deputy President who is to be a Judge of the Industrial Court would be appointed also as Public Service Arbitrator. Judge Olssen is the first occupant of this dual position under the new legislation.

### PART 9—RURAL PRODUCTION

*Wheat* (pages 374-83)—The South Australian wheat harvest for 1968-69 was a record; preliminary figures indicate that the 1968-69 harvest, 83.2 million bushels, was 29.2 million bushels more than the previous record harvest of the 1963-64 season.

*Livestock Numbers* (pages 397-8)—Sheep, cattle and pig numbers at 31 March 1969 were the highest ever recorded in South Australia; preliminary figures for sheep (18,392,100), cattle (865,100) and pigs (288,000) exceeded the previous records of 1966, 1965 and 1968 by 399,000, 168,600, and 45,700 respectively.

## PART 10—COMMERCE

*Price Index of Materials Used in Building Other than House Building*—The index published here is the first of a series of indexes which will be prepared as circumstances permit and which will relate to materials used and articles produced by important defined areas, or sectors, of the economy.

This index measures changes in prices of selected materials used in the construction of buildings (other than houses and 'low-rise' flats for which a separate index is planned) and to a considerable extent provides an up-to-date replacement for the Building Materials group of the Wholesale Price (Basic Materials and Foodstuffs) Index.

It is a fixed-weights index, the composition of which is in accordance with the materials usage in actual building projects selected as representative for the purpose: such usage was derived from reported values of each material used in selected representative buildings constructed in or about 1966-67. The building types directly represented include high-rise flats (generally those exceeding three storeys), offices, factories, health buildings, education buildings and other commercial premises.

The index includes seventy-two items combined in eleven groups in an 'All Groups' index.

The weighting pattern used in the index is shown below. A single weighting pattern for the whole of Australia is applied (with minor exceptions) to local price measures in calculating indexes for each State capital city.

### Price Index of Materials Used in Building Other Than House Building Composition and Weighting Pattern

Base Year: 1966-67

Group	Percentage Contribution of Group to All Groups Index %
1. Concrete Mix, Cement, Sand, etc. . . . .	10.41
2. Cement Products . . . . .	3.64
3. Bricks, Stone, etc. . . . .	5.28
4. Timber, Board and Joinery . . . . .	11.90
5. Steel and Iron Products . . . . .	30.58
6. Aluminium Products . . . . .	6.01
7. Other Metal Products . . . . .	2.59
8. Plumbing Fixtures . . . . .	1.19
9. Miscellaneous Materials . . . . .	7.09
10. Electrical Installation Materials . . . . .	8.61
11. Mechanical Services Components . . . . .	12.70

The price series used relate to specified standards of each commodity and are obtained in all State capital cities from representative suppliers of materials used in building. In the main they are collected as at or as near as possible to the mid-point of the month to which the index refers. Items are described in terms of fixed specifications with the aim of recording price changes for representative materials of constant quality.

The index has been compiled for each month from July 1966, and for financial years from 1966-67. Figures are published to one decimal place to avoid distortions which would occur in rounding the index numbers to the nearest whole number.

Shown below, for separate groups of items and all groups combined, are the index numbers for Adelaide and the weighted average index numbers for the six State capital cities.

### Wholesale Price Index of Materials Used in Building Other Than House Building

(Base of each Index: 1966-67 = 100.0) <sup>(a)</sup>

Group	Adelaide			Weighted Average Six State Capital Cities <sup>(b)</sup>		
	1966-67	1967-68	1968-69 <i>p</i>	1966-67	1967-68	1968-69 <i>p</i>
Concrete, etc. ....	100.0	101.2	105.3	100.0	101.5	103.5
Cement products .....	100.0	101.9	107.6	100.0	102.2	106.8
Bricks, stone, etc. ....	100.0	104.6	108.7	100.0	103.7	108.2
Timber, joinery, etc. ....	100.0	101.5	105.1	100.0	103.0	107.2
Steel and iron products .....	100.0	102.3	105.3	100.0	102.3	106.1
Aluminium products .....	100.0	100.1	99.2	100.0	101.4	103.9
Other metal products .....	100.0	106.0	105.2	100.0	105.9	106.8
Plumbing fixtures .....	100.0	102.7	103.5	100.0	102.8	103.3
Miscellaneous materials .....	100.0	101.1	103.1	100.0	102.3	103.2
Electrical installation materials .....	100.0	100.9	102.1	100.0	100.9	102.1
Mechanical services components ...	100.0	101.4	107.7	100.0	101.4	107.7
All groups .....	100.0	101.8	105.0	100.0	102.2	105.6

(a) Movements shown by index numbers before July 1968 include movements of imputed price series.

(b) See previous table for weighting pattern.

*p*—Preliminary.

The 'All Groups' index for Adelaide is shown in the following table with that for each of the other State capital cities. It is emphasised that these numbers show trends in the index within each individual city, but they do not measure differences in price levels between cities.



**Wholesale Price Index of Materials Used in Building Other than House Building  
All Groups, State Capital Cities**

*(Base of each Index: 1966-67 = 100)*

Period	Sydney	Mel- bourne	Brisbane	Adelaide	Perth	Hobart	Weighted Average Six State Capital Cities
<b>Year:</b>							
1966-67 .....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1967-68 .....	102.6	101.7	102.2	101.8	102.0	102.3	102.2
1968-69 <sup>p</sup> .....	106.5	104.9	105.1	105.0	104.7	105.1	105.6
<b>Month of:</b>							
March 1969 ....	107.9	106.0	104.9	106.4	105.7	106.1	106.6
April 1969 ....	108.3	106.4	106.7	106.5	105.8	106.1	107.2
May 1969 ....	108.8	106.6	107.5	106.9	106.0	106.6	107.6
June 1969 <sup>p</sup> ....	109.3	107.1	107.6	107.1	106.4	106.9	108.0

<sup>p</sup>—Preliminary.

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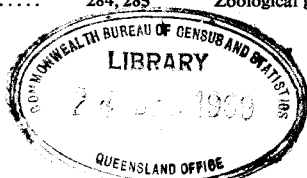
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STATISTICAL DIVISIONS  
OF  
SOUTH AUSTRALIA

REFERENCE

- Statistical Divisions
- Railways
- Main Roads
- Main Arterial Routes
- Secondary Roads
- Principal Tracks

SCALE

MILES 0 10 20 30 40 50 60 70 80 90 100



# A SOIL MAP OF SOUTH AUSTRALIA

## LEGEND

- 1 - CALCREOUS SANDS Ucl-11\*  
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- 2 - PALE COLOURED SILICIOUS SANDS Ucl-21\*  
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- 3 - RED SILICIOUS SANDS Ucl-23\*  
Victoria dune fields  
Simpson dune fields
- 4 - SHALLOW RED FIRM SANDY SOILS Ucl-43\*  
Mungaroo ranges, ridges and hills
- 5 - DEEP RED FIRM SANDY SOILS Ucl-43\*  
Officer plains and terraces
- 6 - LEACHED SANDS Ucl-22\*  
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Big Billy sandhills  
Meinie undulating lands
- 7 - LEACHED SANDS WITH A HARDPAN Ucl-23\*  
Mt. Burr highlands  
Caroline plains and dunes  
Narcosore dunes and swales  
Back Valley undulating lands
- 8 - BROWN SANDS Ucl-1\*  
Chinaman's sandhills and dunes
- 9 - RED EARTHLY SANDS Ucl-21\*  
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- 10 - SHALLOW GREY-BROWN SANDY SOILS Ucl-11\*  
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- 12 - SALINE LOAMY SOILS Ucl-1-1, Ucl-2-2\*  
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36f Yellara rolling lands  
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46i Milang plains  
46j Cupet plains  
46k Penneshaw undulating ridges  
46l Nurap plains  
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48a Wylie basin plains

\*See Atlas of Australian Soils Sheets 1 and 10.

Compiled from sheets 1 and 10 of the Atlas of Australian Soils by K. H. Northcote.  
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SCALE 1 : 2,000,000

KILOMETERS 0 20 40 60 80 100 MILES

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